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**TECHNOLOGY DEMONSTRATION OF  
QUALIFIED VEHICLE MODIFIER (QVM)  
COMPRESSED NATURAL GAS AND  
GASOLINE FUELED FORD F-150 SERIES  
BIFUEL PREP VEHICLES  
AT FT. BLISS, TEXAS**

**INTERIM REPORT  
TFLRF No. 325**

by

**Ruben A. Alvarez**

**Douglas M. Yost**

**U.S. Army TARDEC Fuels and Lubricants Research Facility (SwRI)  
Southwest Research Institute  
San Antonio, TX**

for

**U.S. Department of Energy  
Office of Transportation Technologies  
1000 Independence Avenue, SW  
Washington, D. C.**

**Under Contract to  
U.S. Army TARDEC  
Petroleum and Water Business Area  
Warren, MI 48397-5000**

**Contract No. DAAK70-92-C-0059**

Approved for public release; distribution unlimited

May 2000

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**E. C. Owens, Director  
U.S. Army TARDEC Fuels and Lubricants  
Research Facility (SwRI)**

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## EXECUTIVE SUMMARY

**Problems and Objectives:** A technology demonstration of Ford F-150 series bifueled (compressed natural gas [CNG] or gasoline) Qualified Vehicle Modifier (QVM) vehicles was conducted at Ft. Bliss, Texas. This Department of Energy (DOE) sponsored effort was in support of Section 400-AA of the Alternative Motor Act (AMFA) of 1988, the Clean Air Act (CAA) Amendments of 1990, and the Energy Policy Act of 1992. The objectives of the program were to 1) demonstrate the acceptability of alternative-fueled vehicles in a Department of Defense (DOD) U.S. Army activity in support of installation operations, 2) to quantify vehicle performance and fuel economy, and 3) to assess exhaust emissions using CNG and gasoline fuel in selected vehicles.

**Importance of Project:** With emphasis on finding methods to reduce the amount of pollutants in the air, CNG fuel definitely offers a viable alternative. This technology demonstration provided real-world utilization and performance data on QVM CNG and gasoline bifueled vehicles. Also, the previous fleet of dedicated CNG vehicles presented a problem because random vehicle assignments were not possible due to restricted range. With the introduction of bifueled vehicles, range was no longer a factor, and vehicles could be assigned anywhere in the operating area.

**Technical Approach:** The fleet of General Services Administration (GSA)-owned, Army-leased bifueled vehicles was placed under the direction of the Ft. Bliss Transportation Division. The vehicles were randomly assigned to the different service sections to be used in daily mission requirements. Twenty-five vehicles were randomly selected by the transportation officer to provide the data required. Designated drivers of the bifuel vehicles attended classes that covered topics such as program background and objectives, CNG description and fueling procedures, and data collection procedures.

**Accomplishments:** More than 300,000 miles of combined CNG and gasoline usage were accumulated during the program. There were no major problems reported, and the drivers, as well as section supervisors, favorably received the vehicles. The most prevalent complaints while operating with CNG fuel were the limited range, the distance to the CNG fueling facility located outside the installation, and the prolonged starting time. Mechanically, the vehicles performed satisfactorily, and of the 25 vehicles monitored, only two required maintenance. Federal Test Procedures (FTP) exhaust emissions testing was performed at Southwest Research Institute (SwRI) on three selected vehicles at 4,000-, 10,000- and 20,000-mile intervals. The selected vehicles when operated on CNG showed dramatic reductions in non-methane organic gas (NMOG), non-methane hydrocarbons (NMHC), and carbon monoxide (CO). There was a small increase in oxides of nitrogen (NO<sub>x</sub>) emissions while using CNG. Fuel economy was equivalent with CNG and gasoline when compared to FTP results.

**Military Impact:** U.S. military installations continue to provide an excellent avenue to introduce alternative fuels. Therefore, the data accumulated during this demonstration program can be used in the decision-making process of assigning GSA bifueled vehicles to military installations. Also, the demonstration clearly shows the need for alternative fueling infrastructure in the immediate vicinity of the fleet.

## FOREWORD/ACKNOWLEDGMENTS

This work was performed by the U.S. Army TARDEC Fuels and Lubricants Research Facility (TFLRF) located at Southwest Research Institute (SwRI), San Antonio, Texas, during the period August 1995 through May 1997 under Contract No. DAAK70-92-C-0059. The work was funded by the U.S. Department of Energy (DOE) and administered by the U.S. Army Tank-Automotive RD&E Center (TARDEC), Petroleum and Water Business Area, Warren, Michigan. Mr. Lee Slezak (CE-322) served as the DOE project technical monitor, Mr. Luis Villahermosa (AMSTA-TR-D/210) served as the TARDEC contracting officer's representative and project technical monitor.

The authors would like to acknowledge the assistance provided by Mr. Robert Galindo, Transportation Division, Ft. Bliss, Texas, for his untiring support throughout the demonstration program. Also special mention is given to Mr. Bernard Jones, GSA Fleet Management Office, El Paso, Texas, for his assistance in the data gathering effort.

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## LIST OF ACRONYMS

AFV	Alternative- Fueled Vehicles
AMFA	Alternative Motor Fuels Act
CAA	Clean Air Act
CARB	California Air Resources Board
CNG	Compressed Natural Gas
CO	Carbon Monoxide
DOD	Department of Defense
DOE	Department of Energy
EPA	Environmental Protection Agency
FTP	Federal Test Procedures
GSA	General Services Administration
GVW	Gross Vehicle Weight
HFET	Highway Fuel Economy Test
LDT	Light-Duty Truck
LEV	Low Emission Vehicle
MIR	Maximum Increment Reactivity
NMHC	Non-methane Hydrocarbons
NMOG	Non-methane Organic Gases
NO <sub>x</sub>	Nitrogen Oxides
OEM	Original Equipment Manufacturer
QVM	Qualified Vehicle Modifier
RAF	Reactivity Adjustment Factor
SR	Specific Reactivity
SwRI	Southwest Research Institute
TACOM	U. S. Army Tank-Automotive and Armaments Command
TARDEC	U.S. Army Tank- Automotive Research, Development and Engineering Center
TFLRF	TARDEC Fuels and Lubricants Research Facility
THC	Total Hydrocarbons
TLEV	Transitional Low Emissions Vehicle
TMP	Transportation Motor Pool
ULEV	Ultra Low Emission Vehicle

## I. BACKGROUND

Section 400-AA of the Alternative Motor Fuels Act (AMFA) of 1988, Public Law 100494, established The Federal Light Vehicle Program.(1)\* The AMFA's aim is to incorporate alternative-fuel vehicles (AFVs) into government fleet operations and evaluate their performance. The Department of Energy (DOE) is responsible for implementing the AMFA with the assistance of other agencies.(2) Federal fleets, as defined in the Energy Policy Act (EPACT) of 1992, are required to comply with Executive Order 13031 in their acquisitions of AFVs.(3,4) Natural gas has demonstrated considerable potential as a cleaner-burning fuel for motor vehicles than gasoline. Also, the number of compressed natural gas (CNG) fuel vehicles has increased dramatically since the start of the AMFA program. Substituting cleaner-burning alternative fuels in motor vehicles has drawn considerable attention in the last decade. The driving forces for this substitution are the reduction of crude oil dependence and the reduction or elimination of some pollutant emissions—especially ozone-forming hydrocarbons. Increased use of alternative “clean burn” fuels for motor vehicles has escalated to a prominent role in the ongoing air pollution control strategies for California and the federal government.(5)

## II. INTRODUCTION

This technology demonstration was sponsored by DOE under an interagency agreement between DOE and the U.S. Army Tank-Automotive Research, Development and Engineering Center (TARDEC).(6) The agreement was executed to provide for U. S. Army support of AMFA. After the fleet of dedicated General Motors 3/4-ton original equipment manufacturer (OEM) pickup trucks was prematurely halted at Ft. Bliss, Texas, the General Services Administration (GSA) made an acquisition of over 100 Ford F150 bifuel (CNG or gasoline) Qualified Vehicle Modifier (QVM) pickup trucks.(7) The vehicles were distributed between Ft. Hood, Texas and Ft. Bliss, Texas. Twenty-five of the vehicles assigned to Ft. Bliss were selected to be in the demonstration program. Ft. Bliss was chosen because of its location in El Paso, Texas—a non-attainment air quality area designated by the Environmental Protection Agency (EPA).

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\* Underscored numbers in parentheses refer to list of references at end of document

Liaison/coordination meetings with transportation motor pool (TMP) personnel at Ft. Bliss and the GSA Fleet Management Office in El Paso were conducted by the monitor from the U.S. Army TARDEC Fuels and Lubricants Research Facility (TFLRF), located at Southwest Research Institute (SwRI) in San Antonio, Texas.

### **III. PROGRAM OBJECTIVES**

The objectives of the technology demonstration of QVM bifuel (CNG or Gasoline) vehicles were as follows:

- To demonstrate the acceptability of bifuel GNG or gasoline vehicles in support of AMFA, and in a Department of Defense U. S. Army activity in support of post camp and station operations;
- To quantify vehicle performance, fuel economy, engine performance and maintenance;
- To assess regulated emissions using both gasoline and CNG fuels

### **IV. DETAILS OF DEMONSTRATION**

#### **A. General**

Training classes were conducted for designated drivers of the test vehicles and for selected TMP personnel at Ft. Bliss prior to the start of the program. Topics included the following:

- Program background and objectives
- CNG description and precautions
- Bifuel AFV description
- Program data collection objectives
- Data-collection procedures and responsibilities

The TMP division at Ft. Bliss assigned the bifuel vehicles to the different sections and units in the same manner as the regular vehicles without regard to driving cycles and mission requirements. The only concession was assigning the vehicles within the area in which the CNG-fueling facility was available to the drivers. The vehicles were dispatched on a weekly basis, and the drivers were instructed to turn in the previous week's operational information prior to the next week's dispatch.



The GSA fleet offices at Ft. Bliss and El Paso agreed to provide quarterly maintenance records on the 25 selected test vehicles.

Meetings were held with GSA and TMP staff to coordinate the selection of three test vehicles for emissions testing at selected intervals throughout the duration of the demonstration program. The transportation officer handled the selection of vehicles for emissions testing to minimize the impact that random selection of critical-use vehicles would incur. The vehicles were transported from El Paso to SwRI for testing, which required a turnaround of five working days. Testing included the Federal Test Procedure (FTP) for regulated emissions, Highway Fuel Economy Test (HFET), and full hydrocarbon speciation. Testing was conducted at 4,000-, 10,000-, and 20,000-mile intervals.

The TFLRF monitor visited El Paso and Ft. Bliss monthly to liaise with GSA and TMP fleet managers, collect usage data, and solicit user comments on the operability of the test vehicles.

## **B. Fleet Vehicle Description**

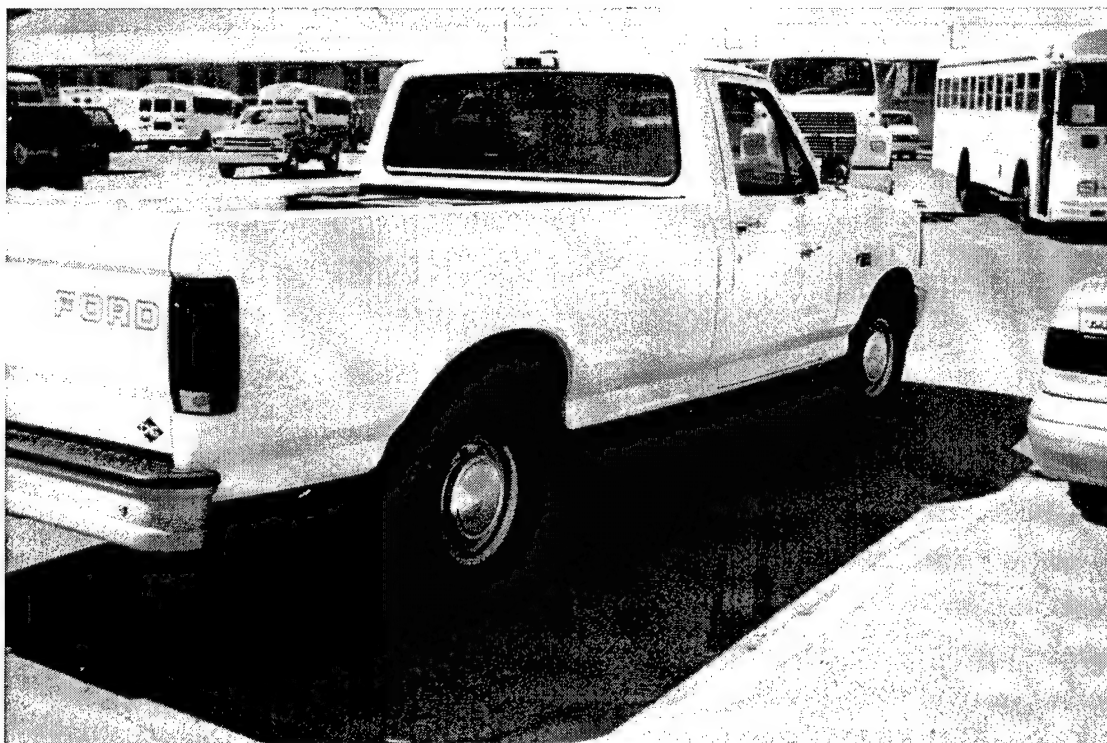
The 25 GSA-owned, Army-leased vehicles used for the demonstration were 1995 Ford F150 bifuel 1/2 ton pickup trucks with a gross vehicle weight (GVW) rating of 6,200 lbs. (Figure 1). The vehicles were converted to use CNG by Southern Union Gas Company in Austin, Texas, under Ford Motor Company's QVM Ford F-Series 4.9L bifuel prep vehicle program. Unique features of the 4.9L engine included exhaust valve seat inserts, hard faced exhaust valves, corrosion resistant intake valves, hardened intake valve seats, positive valve rotation, and revised intake valve springs. Collectively, these features insured improved valve train durability. Other components included upgraded front springs to accommodate the gaseous fuel system and unique vehicle identification that provided service technicians with vehicle conversion data. The F Series vehicles modified for natural gas included natural gas tank (in-bed, 8.4 equivalent gallons), natural gas tank (under body, 3.8 equivalent gallons), natural gas fill receptacle, natural gas system shut-off valve, natural gas regulator assembly, 4.9L gaseous fuel prep engine, gasoline tank (18.2 gallons), and gasoline filler. Figure 2 illustrates the prep vehicle CNG modifications.(8) The vehicles tested at Ft. Bliss were configured as Package #1 (Figure 2b). The power train consisted of a 4.9L engine coupled to an E40D automatic transmission. All trucks were equipped with air conditioning and power steering.

Table 1 lists the characteristics of the test vehicles, including odometer reading and test start date.

Table 1. Description of Test Vehicles										
Vehicle Tag No.	Year	Make & Model	Engine Size	No. of Cyl.	Auto Trans.	GVW*	Tire Size	Odometer	Date	Test Fuel
4272027	1995	Ford F150	4.9L	6	E40D	6,200	P235/75Rx15	360	8/10/95	Gas/CNG
4272028	1995	Ford F150	4.9L	6	E40D	6,200	P235/75Rx15	770	8/02/95	Gas/CNG
4272031	1995	Ford F150	4.9L	6	E40D	6,200	P235/75Rx15	1542	8/01/95	Gas/CNG
4272033	1995	Ford F150	4.9L	6	E40D	6,200	P235/75Rx15	693	8/16/95	Gas/CNG
4272035	1995	Ford F150	4.9L	6	E40D	6,200	P235/75Rx15	1055	8/02/95	Gas/CNG
4272038	1995	Ford F150	4.9L	6	E40D	6,200	P235/75Rx15	1787	8/02/95	Gas/CNG
4272041	1995	Ford F150	4.9L	6	E40D	6,200	P235/75Rx15	392	8/10/95	Gas/CNG
4272042	1995	Ford F150	4.9L	6	E40D	6,200	P235/75Rx15	1101	8/03/95	Gas/CNG
4272043	1995	Ford F150	4.9L	6	E40D	6,200	P235/75Rx15	763	8/04/95	Gas/CNG
4272045	1995	Ford F150	4.9L	6	E40D	6,200	P235/75Rx15	1022	8/01/95	Gas/CNG
4272046	1995	Ford F150	4.9L	6	E40D	6,200	P235/75Rx15	418	8/03/95	Gas/CNG
4272050	1995	Ford F150	4.9L	6	E40D	6,200	P235/75Rx15	1260	8/07/95	Gas/CNG
4272051	1995	Ford F150	4.9L	6	E40D	6,200	P235/75Rx15	864	8/08/95	Gas/CNG
4272052	1995	Ford F150	4.9L	6	E40D	6,200	P235/75Rx15	1439	8/02/95	Gas/CNG
4272054	1995	Ford F150	4.9L	6	E40D	6,200	P235/75Rx15	600	8/08/95	Gas/CNG
4272055	1995	Ford F150	4.9L	6	E40D	6,200	P235/75Rx15	498	8/10/95	Gas/CNG
4272056	1995	Ford F150	4.9L	6	E40D	6,200	P235/75Rx15	637	8/11/95	Gas/CNG
4272057	1995	Ford F150	4.9L	6	E40D	6,200	P235/75Rx15	574	8/04/95	Gas/CNG
4272059	1995	Ford F150	4.9L	6	E40D	6,200	P235/75Rx15	816	8/03/95	Gas/CNG
4272060	1995	Ford F150	4.9L	6	E40D	6,200	P235/75Rx15	264	8/15/95	Gas/CNG
4272062	1995	Ford F150	4.9L	6	E40D	6,200	P235/75Rx15	989	8/09/95	Gas/CNG
4272064	1995	Ford F150	4.9L	6	E40D	6,200	P235/75Rx15	568	8/02/95	Gas/CNG
4270086	1995	Ford F150	4.9L	6	E40D	6,200	P235/75Rx15	290	8/21/95	Gas/CNG
4270087	1995	Ford F150	4.9L	6	E40D	6,200	P235/75Rx15	659	8/08/95	Gas/CNG
4270090	1995	Ford F150	4.9L	6	E40D	6,200	P235/75Rx15	980	8/21/95	Gas/CNG



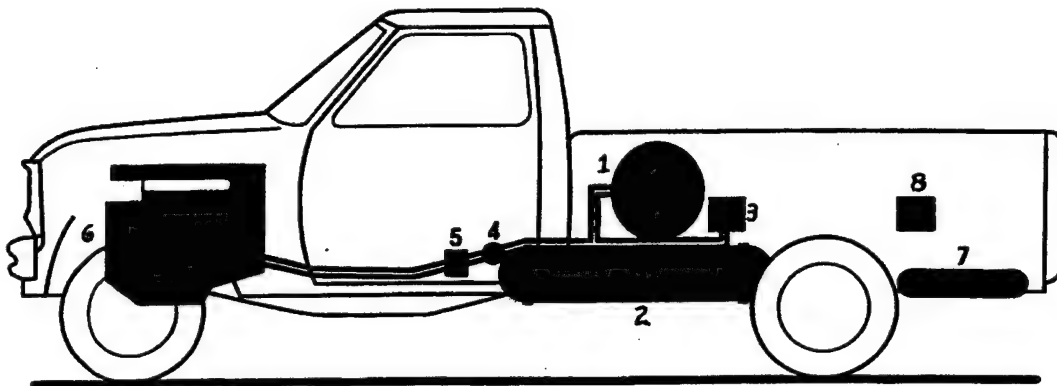
**Figure 1a. Front view of bifuel truck**



**Figure 1b. Rear view of bifuel truck**

# Ford QVM Program Typical Ford F-Series Modified For Natural Gas

## *Fuel System Component Locations*



- 1) Natural Gas Tank (In-bed)
- 2) Natural Gas Tank (Underbody)
- 3) Natural Gas Fill Receptacle
- 4) Natural Gas System  
Manual Shut-off Valve
- 5) Natural Gas Regulator Assembly
- 6) 4.9L Gaseous Fuel Prep Engine
- 7) Gasoline Tank (18.2 Gallons)
- 8) Gasoline Filler



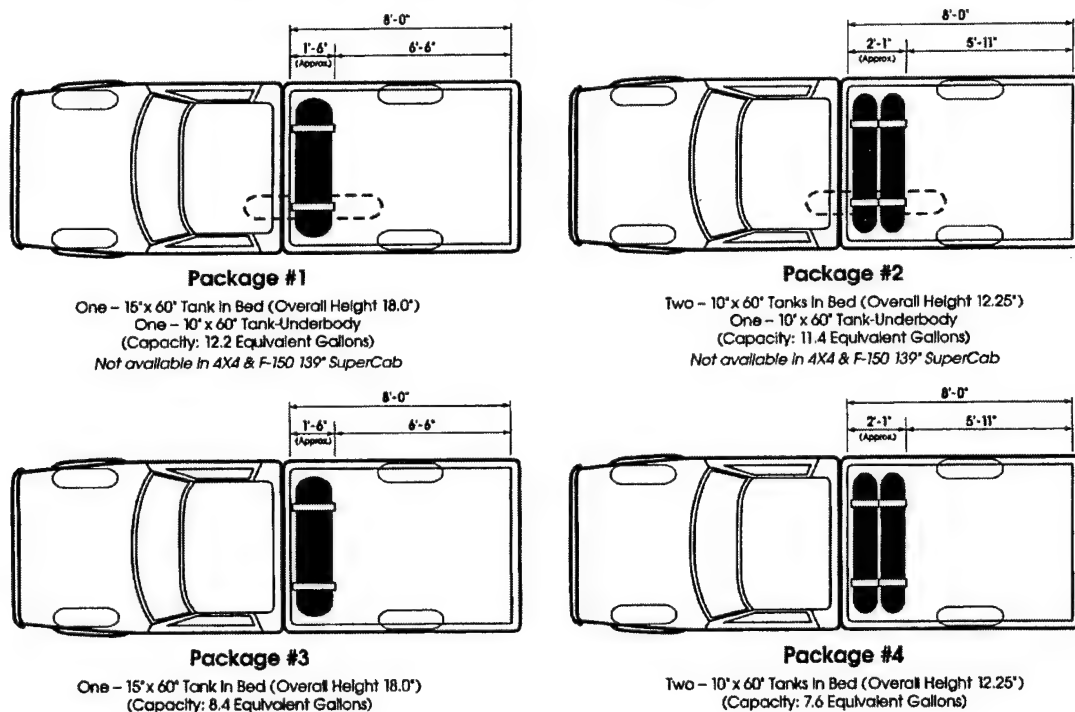
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133993

Figure 2a. Schematic of CNG Component Locations

## Natural Gas Tank Configurations:



NOTES: – Amount of usable natural gas may vary due to compression heating during fast fill, & residual fuel quantities  
 – 18.2 gallon gasoline tank is standard on all packages above (see opposite side)

**Figure 2b. Natural Gas Tank Configurations:  
 Package No. 1 - Natural Gas Tank Configuration for Vehicles at Ft. Bliss**

### C. Data Collection

Data were provided in the following formats by the following sources at FT. Bliss and El Paso:

Vehicle weekly log sheets – Drivers were instructed to enter operational data to include performance problems for a selected period of time in the log sheet provided by the TFLRF monitor. TMP dispatch personnel collected the log sheets from the drivers at the end of each week and mailed the log sheets to the TFLRF monitor each month.

Daily/Monthly Utilization Record – Ft. Bliss TMP procedures required the vehicle operators to maintain the utilization record in their possession as proof of dispatch and to enter daily operational usage data, which included vehicle tag number, beginning and ending odometer readings, total miles driven, and total fuel added. TMP dispatch personnel collected the utilization records from the drivers and mailed the forms to TFLRF.

Gasoline Fuel Issue Record – Ft. Bliss TMP administrative personnel provided the TFLRF monitor with the monthly automated gasoline fuel issue record, which included date, vehicle tag number, odometer reading, and total gallons dispensed.

CNG Fuel Issue Record – The GSA Fleet Management Office provided the TFLRF monitor with monthly invoices from C and R Distributing Inc. for all CNG fuel issues from the commercial facility. The record contained vehicle tag number, date, total gallons dispensed, and odometer reading.

Repair Invoices – The local Ford dealer in El Paso, with permission from the GSA Fleet Management Office, provided the TFLRF monitor with invoices of fuel component repairs.

## **D. Fueling Stations**

### **1. Compressed Natural Gas**

The CNG fueling station is a privately owned, card lock unattended facility located at Interstate 10 and Airway Boulevard in El Paso, approximately 5.5 miles from the bifuel vehicle motor park at Ft. Bliss. The station was equipped with a 425-cfm compressor, a 100-gallon-equivalent capacity storage tank, and a two-nozzle dispenser with Sherex quick disconnects with a maximum fill pressure of 3,000 psi. Figure 3 shows the CNG dispensing station at Interstate 10 and Airway Boulevard in El Paso. Ft. Bliss and Southern Union Gas Company personnel made several attempts to have a CNG fueling facility constructed adjacent to the gasoline fueling facility at Ft. Bliss; however, funding shortages prohibited the closing of any agreements. The DOE contract program officer also attempted to fund facility construction to no avail.

### **2. Gasoline**

The gasoline fueling station at Ft. Bliss is a DOD-operated facility located at the TMP. The station is a card lock automated facility, and the fuel is delivered to underground tanks by a local refinery under contract. Figure 4 shows the gasoline fueling facility located inside the installation at the TMP. Ft. Bliss is in a carbon monoxide non-attainment area; therefore, reformulated gasoline is utilized by all gasoline-burning vehicles. TFLRF conducted a short fuel-sampling program at Ft. Bliss. Findings were reported in Letter Report BFLRF No. 94-002.(9)



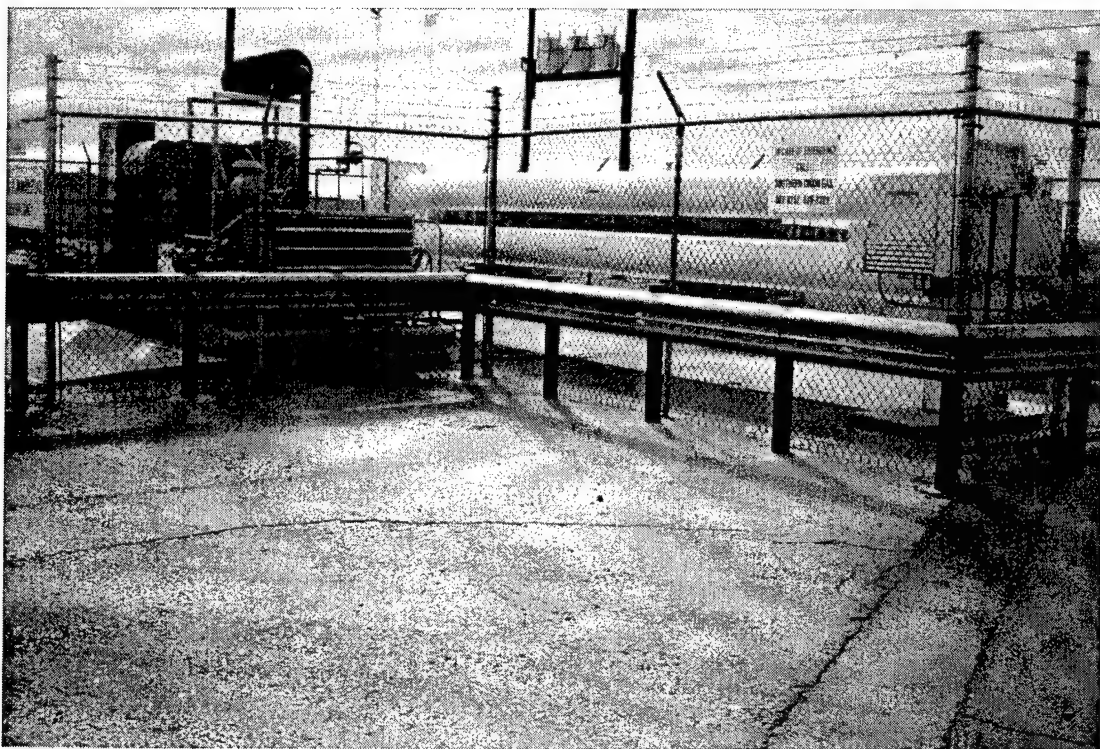


Figure 3a. CNG-dispensing station in El Paso: Compressor and storage tanks

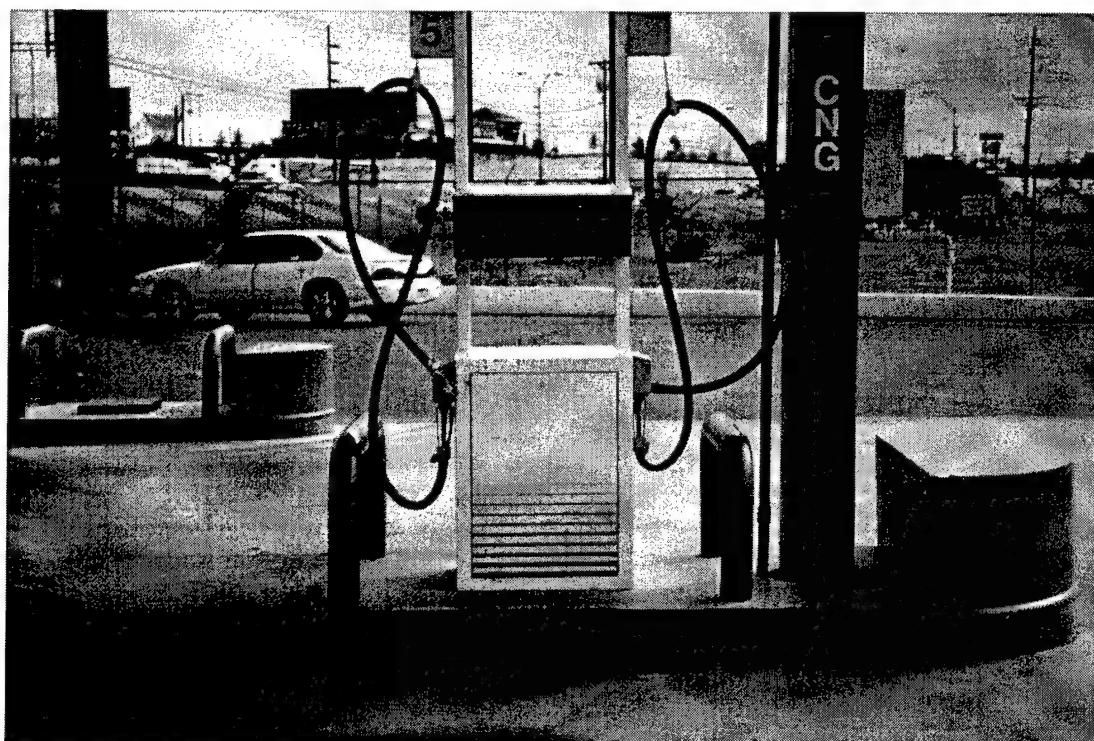
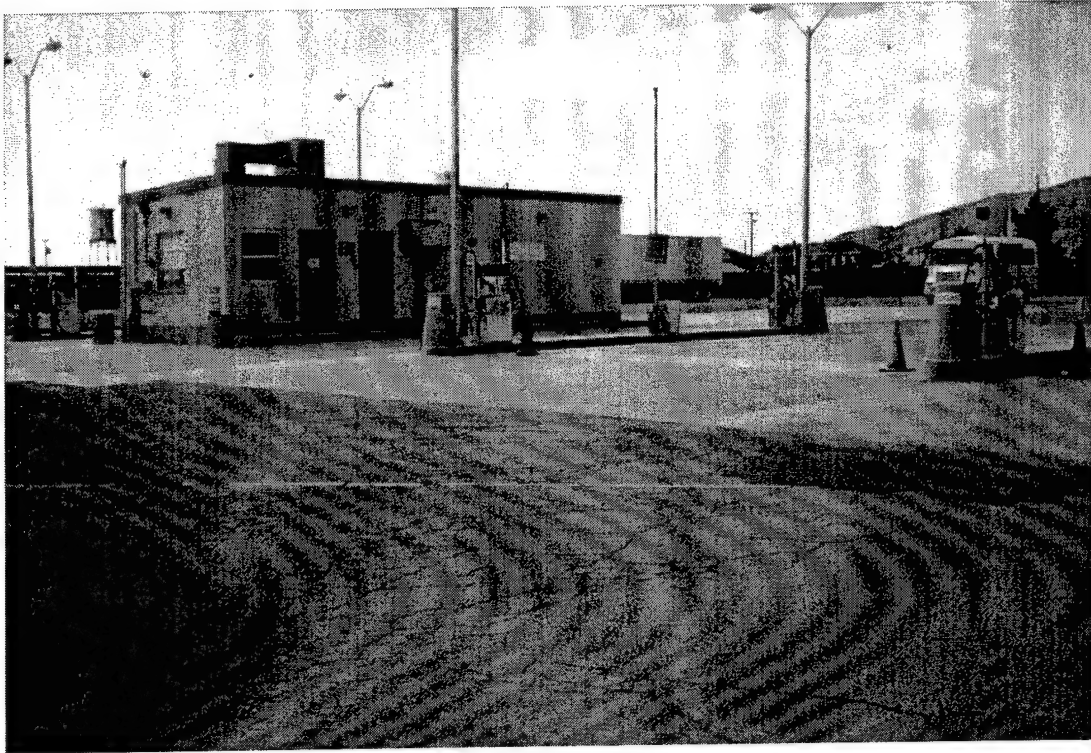
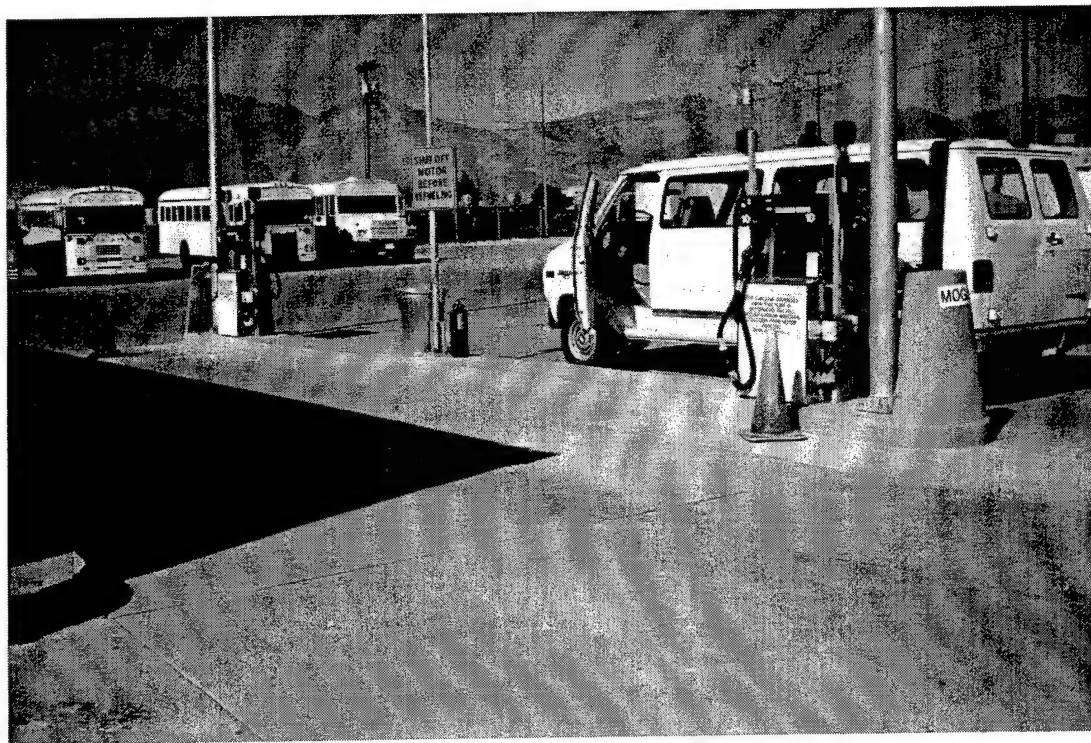


Figure 3b. CNG-dispensing station in El Paso: CNG-dispensing pump



**Figure 4a. Gasoline Control Station**



**Figure 4b. Gasoline Dispensing Pumps**



## **V. RESULTS OF DEMONSTRATION**

### **A. Fleet Test Results**

#### **1. General**

The 25 test vehicles accumulated 300,943 miles of operation from August 1995 through May 1997. Monthly mileage and fuel-usage summaries for each test vehicle are included in Appendix A. The demonstration program was scheduled to end in December 1996; however, in an agreement (10) between the DOE contract officer and the TFLRF monitor, the program was extended through May 1997.

#### **2. Fuel Economy**

A summary of the fuel economy data for the test vehicles is presented in Table 2. Individual summaries for each of the 25 test vehicles are included in Appendix A. The fuel economy, calculated from usage data on the bifuel vehicles, is a combination of gasoline and CNG fuels. The energy conversion for the El Paso area was 128 cubic feet of natural gas per equivalent gallon. Figure 5 shows gasoline and CNG usage by vehicle throughout the program. Figure 6 shows the total mileage accumulation by vehicle. The highest mileage accumulation was 32,447 miles and the lowest was 5,457 miles. Figure 7 is a presentation of fuel economy by vehicle. Fuel economy ranged from 11.9 to 14.6 mpg, with an average of 13.4 mpg. Figure 8 shows the averaged combined gasoline and CNG actual fleet data compared to the combined averaged FTP results. The EPA mileage specification report (11) for the 1995 F150 series trucks with the 4.9L engine lists the city driving cycle gasoline fuel economy at 15 miles per gallon. The actual fleet data shows a difference in fuel economy of approximately 11 percent between the averaged FTP results and the EPA's mileage specification report. This difference can be attributed to the duty cycle of the vehicles.

#### **3. Fuel System Component Replacement**

The test vehicles were under manufacturer's warranty throughout the demonstration program. An authorized Ford dealership in El Paso performed all unscheduled repairs on the bifuel vehicles. Collectively, the vehicles performed extremely well. Two unscheduled maintenance actions were

reported and repaired during the demonstration program. Vehicle No.4272045 failed to start in the CNG mode. The wiring assembly was repaired. Vehicle No.4272038 developed a gas leak around the mid-ship tank. The fuel line from mid-ship tank to union was replaced. All vehicles underwent an in-bed mounted CNG tank re-strapping modification to prevent shifting. The warranty work was performed under Ford's Technical Service Bulletin recall No. 95011F.

<b>Table 2. Summary of Test Vehicle Data Miles and Combined CNG/Gasoline Consumption</b>					
<b>Vehicle Tag No.</b>	<b>Total Program Miles</b>	<b>Gallons Gasoline</b>	<b>Gallons CNG</b>	<b>Gallons/Mile</b>	<b>Miles/Gallon</b>
4272027	7,589	528.5	49.3	0.076	13.1
4272028	11,525	357.7	493.7	0.074	13.5
4272031	10,184	648.7	100.5	0.074	13.6
4272033	6,260	399.4	75.1	0.076	13.2
4272035	12,879	906.5	117.9	0.080	12.6
4272038	21,408	1,377.1	183.5	0.073	13.7
4272041	12,334	856.0	113.4	0.079	12.7
4272042	10,736	803.9	21.3	0.077	13.0
4272043	10,130	519.5	253.6	0.076	13.1
4272045	5,839	447.3	41.4	0.084	11.9
4272046	5,457	370.6	61.2	0.079	12.6
4272050	12,950	891.3	107.8	0.077	13.0
4272051	32,445	1,878.6	463.9	0.072	13.6
4272052	21,498	1,419.4	226.1	0.077	13.1
4272054	11,330	760.2	70.8	0.073	13.6
4272055	7,159	500.8	44.1	0.076	13.1
4272056	8,126	424.3	131.0	0.068	14.6
4272057	7,728	520.9	34.7	0.072	13.9
4272059	15,975	570.7	692.6	0.079	12.7
4272060	5,475	381.1	29.1	0.075	13.4
4272062	13,351	879.7	117.3	0.075	13.4
4272064	10,890	676.0	114.2	0.073	13.8
4270086	8,798	606.3	39.6	0.073	13.6
4270087	12,058	728.8	138.2	0.072	13.9
4270090	18,836	630.4	743.0	0.073	13.7
*GVW = Gross Vehicle Weight					

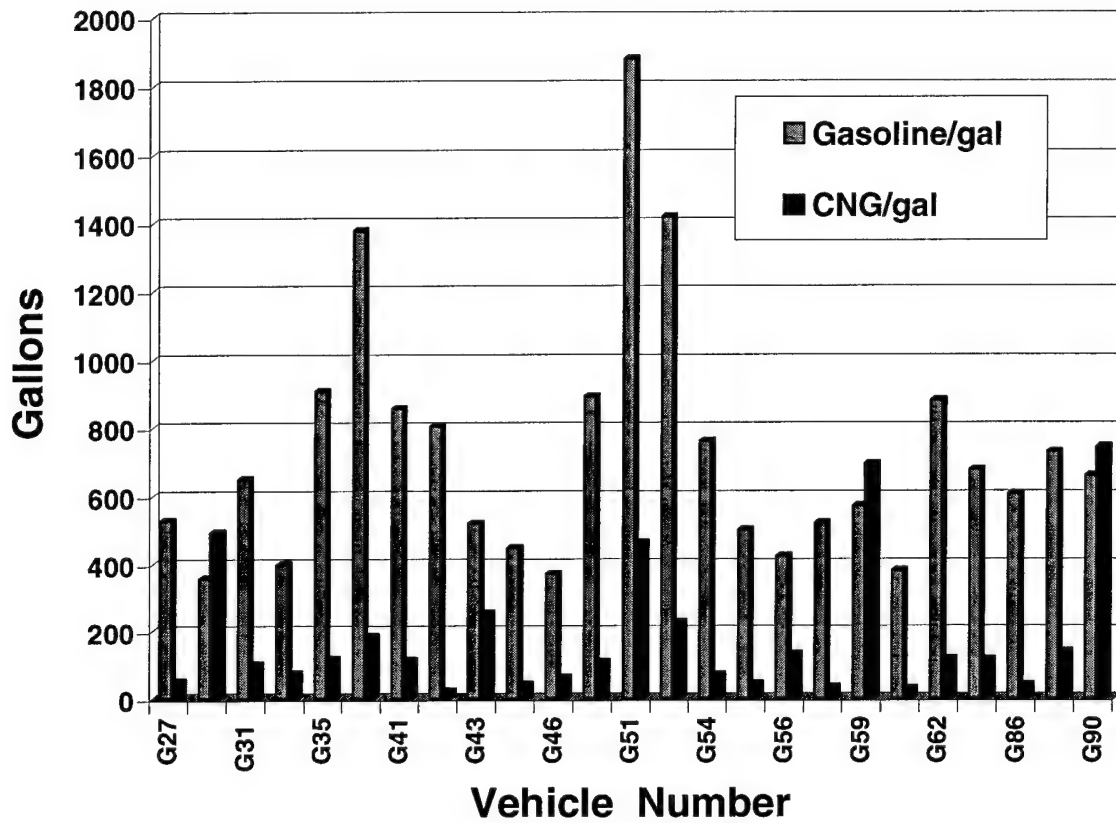


Figure 5. Gasoline and CNG Usage

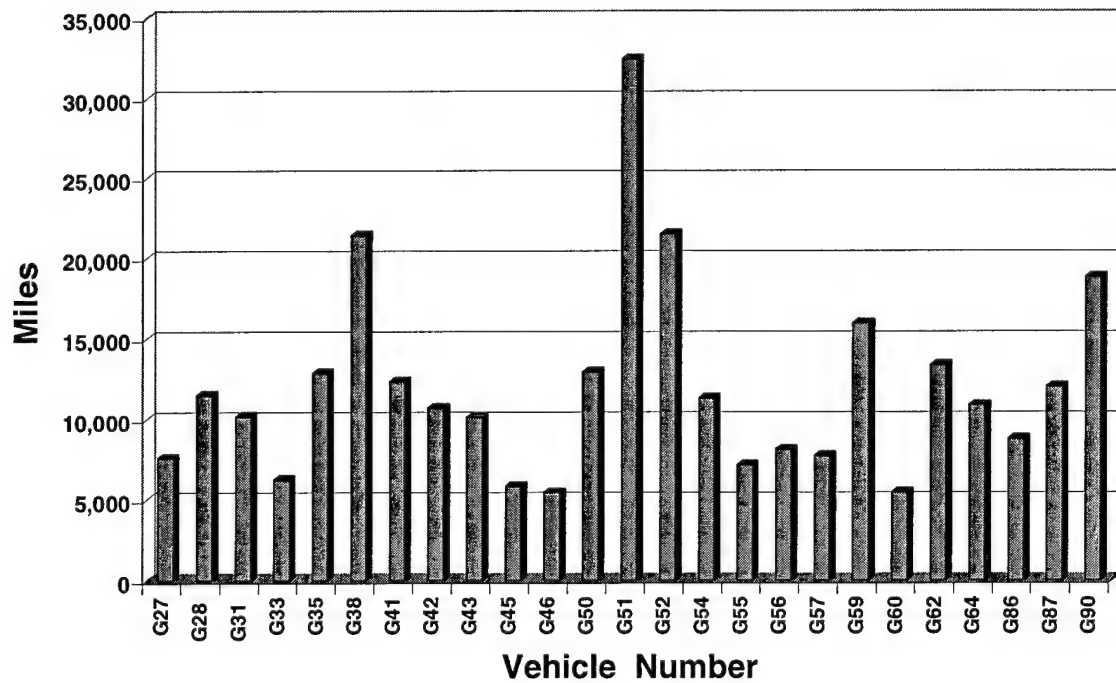


Figure 6. Total Mileage Accumulation

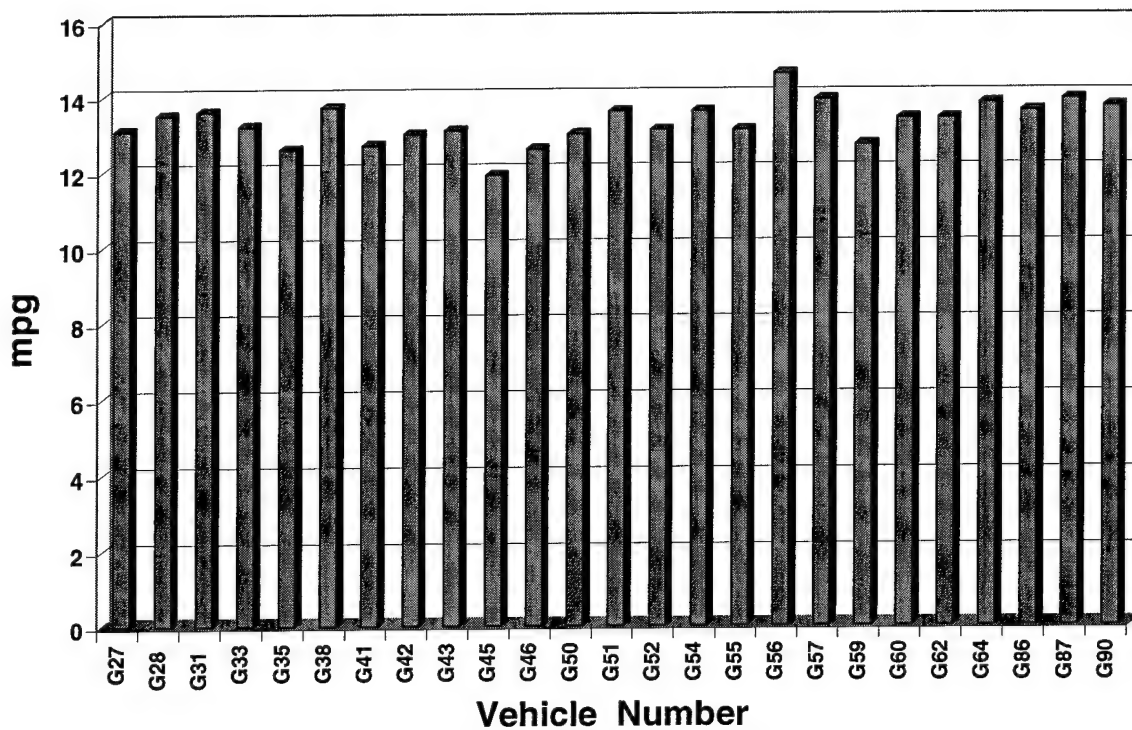


Figure 7. Fuel Economy by Vehicle

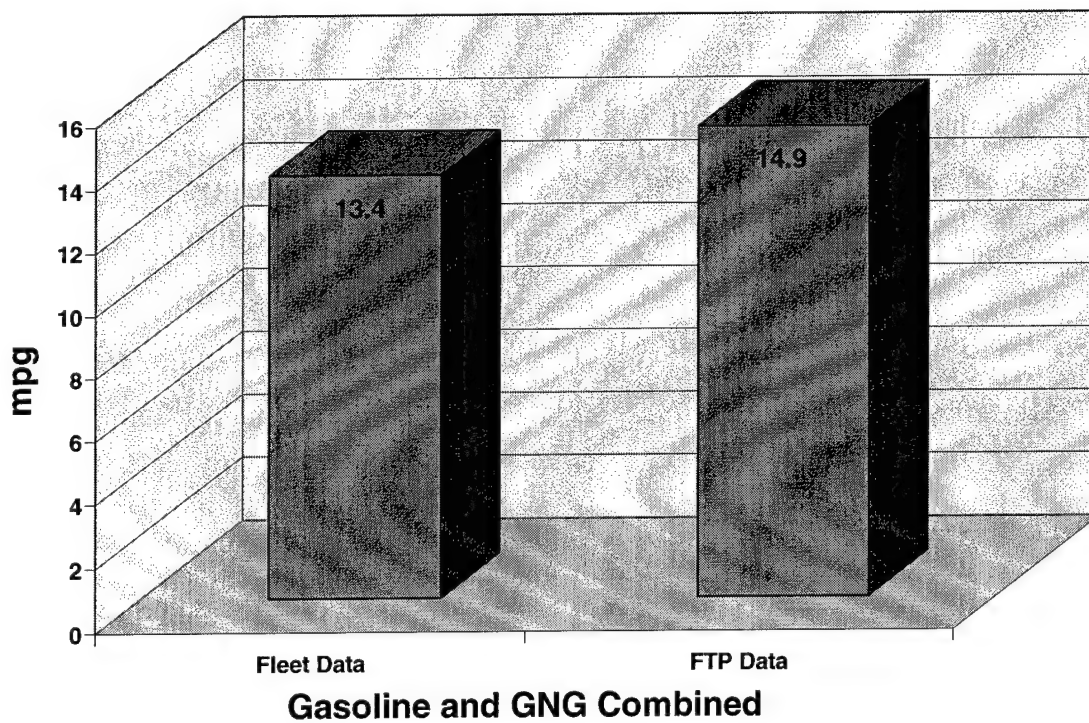


Figure 8. Fuel Economy Comparison: Fleet Data Vs. FTP Data

#### **4. Vehicle Performance**

The performance of the test vehicles was assessed by requiring the drivers to rate the degree of severity of eight performance-problem variables catalogued on the driver's daily log sheet. An "A" signified mildly annoying, while "T" signified very troublesome. The vehicle performance data was gathered for 11 months and was discontinued when only a few selected drivers were reporting performance problems. Table 3 presents a monthly performance-problem summary, while Table 4 summarizes the driver's responses to noted performance problems. The most prevalent performance problems reported on the bifueled vehicles were "hard to start," "lack of power," and "acceleration." Table 4 shows that these three variables constitute 57 percent of the performance problems reported, while "idle quality," "stalled after starting," and "stalled in traffic," make up 30 percent of the problems reported, and "pinging" and "hesitation" account for the remaining 13 percent. Figures 9 through 12 graphically present the frequency of performance problems reported and the number of vehicles reporting difficulties for the eight performance problems studied. The data reflect a sharp decline in reported performance problems beginning in December 1996 for all except "hard to start." Also, the same problems were appearing only on a selected number of vehicles. GSA maintenance personnel inspected these vehicles, and all systems were within normal parameters.

#### **5. Resolution of User Concerns**

It was the practice throughout the demonstration program to investigate users' concerns on the operability of the bifueled vehicles. Therefore, drivers' comments were solicited at every site visit. Without exception, every driver queried complained of the vehicle's longer starting time, lack of power, and acceleration while using CNG fuel. Early into the program, TFLRF staff conducted cold/hot start and full throttle acceleration tests using CNG and gasoline fuels to determine the severity of the complaint.

Table 3. Bifuel Fleet Monthly Performance Problem Summary -August 1995 Through June 1996

Performance Problem	August		September		October		November		December		January		February		March		April		May		June	
	A*	T	A	T	A	T	A	T	A	T	A	T	A	T	A	T	A	T	A	T	A	T
Hard to Start	83	0	110	9	92	0	64	1	23	0	26	11	22	0	45	3	30	0	22	0	31	0
	18	0	11	4	10	0	11	1	6	0	4	3	4	0	6	1	3	0	4	0	4	0
Stalled After Starting	26	3	38	11	41	0	28	0	1	0	0	0	1	4	6	6	15	0	10	0	10	0
	7	2	6	3	3	0	5	3	1	0	0	0	1	1	2	1	1	0	1	0	1	0
Stalled in Traffic	19	4	29	11	24	18	19	9	1	0	0	0	1	3	1	5	15	0	10	0	10	1
	4	3	4	2	2	1	3	2	1	0	1	0	1	1	1	1	1	0	1	0	1	1
Idle Quality	20	1	32	8	26	29	16	23	1	0	3	0	0	5	1	11	12	4	10	0	14	0
	1	1	4	2	4	2	3	3	1	0	1	0	0	2	1	2	2	1	1	0	1	0
Acceleration	33	5	49	35	29	48	4	33	0	1	10	0	4	6	6	6	12	4	10	0	14	0
	14	2	6	5	4	3	3	4	0	1	2	0	1	2	2	1	2	1	1	0	1	0
Hesitation	13	7	26	13	28	18	10	17	1	0	1	0	0	3	6	6	12	4	10	0	10	3
	3	1	3	2	3	1	3	3	1	0	1	0	0	1	2	1	2	1	1	0	1	1
Lack of Power	48	3	63	12	50	29	16	17	0	1	6	0	1	5	6	6	16	0	10	0	10	2
	11	1	6	4	7	3	6	4	0	1	2	0	1	1	2	1	2	0	1	0	1	1
Pinging	19	0	35	4	42	0	26	1	1	0	2	0	0	0	6	0	15	0	10	0	10	0
	2	0	3	1	3	0	3	1	1	0	1	0	0	0	2	0	1	0	1	0	1	0

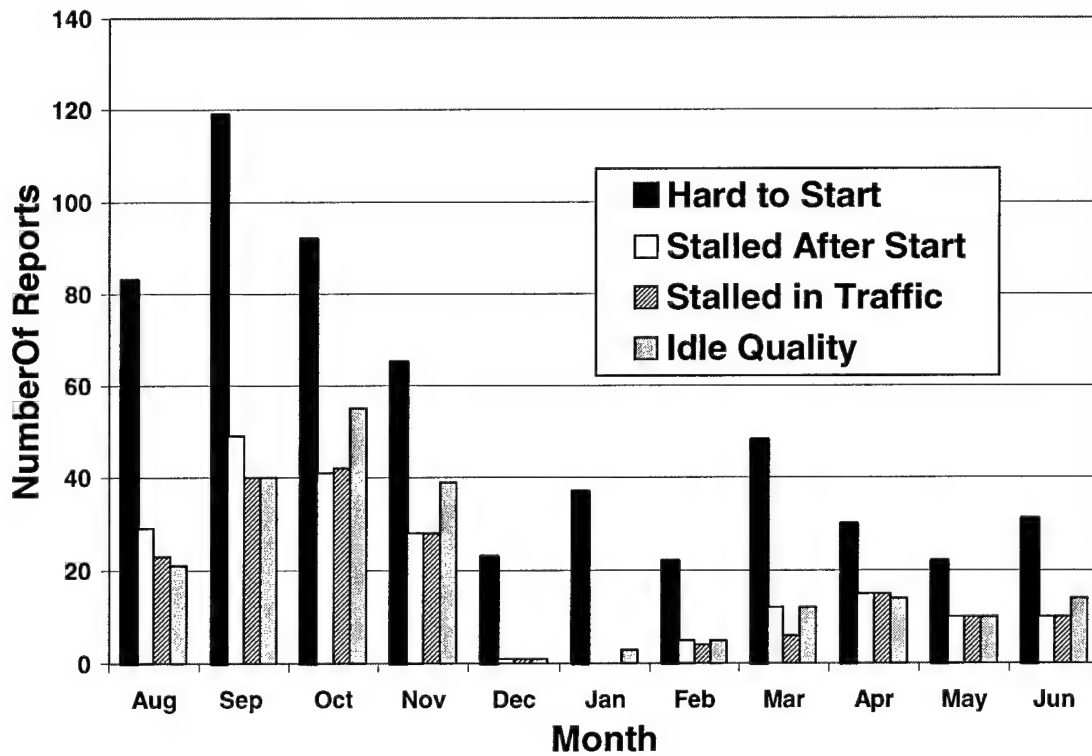
\*A = Mildly annoying  
T = Very troublesome  
Upper No. = Total number of occurrences  
Lower No. = Number of vehicles reporting problems

**Table 4. Drivers' Responses to Performance Problems**

Performance Problems	Total Number of Occurrences	
	A*	T**
Hard to Start	549	24
Started After Start	176	24
Stalled in Traffic	129	51
Idle quality	135	81
Acceleration	171	138
Hesitation	117	71
Lack of Power	226	75
Pinging	166	5
	1669	470

\* A = Mildly annoying

\*\* T = Very troublesome



**Figure 9. Frequency of Reported Performance Problems**

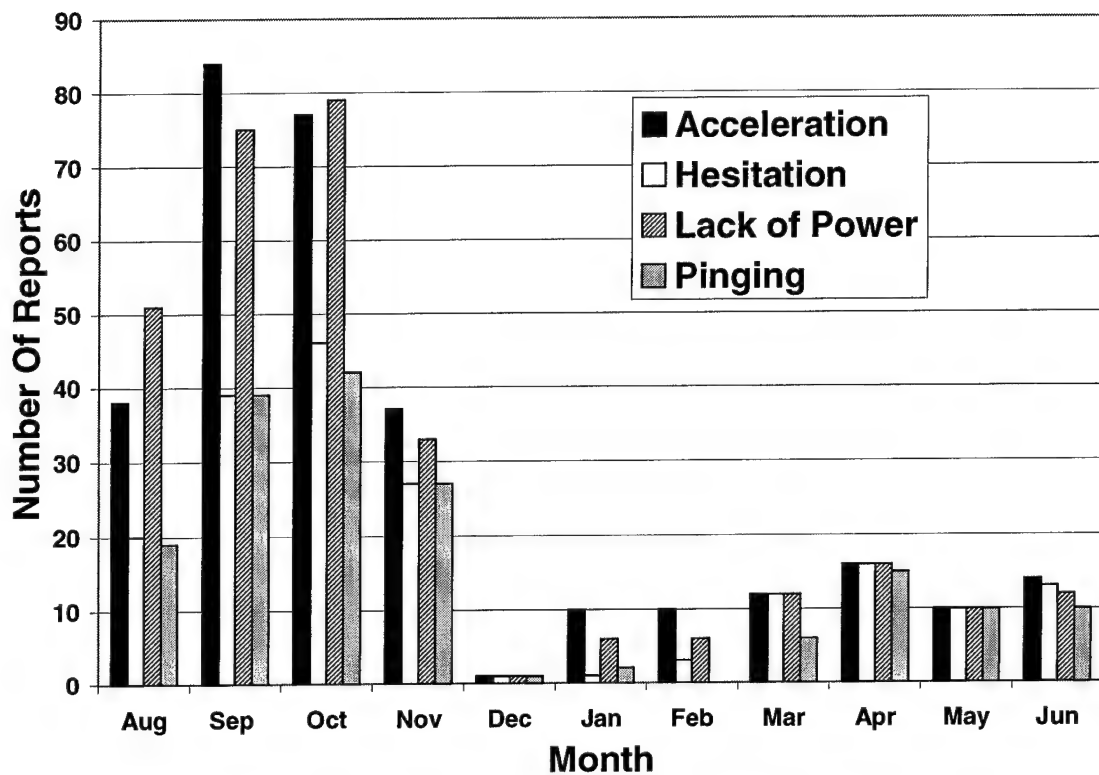


Figure 10. Frequency of Reported Performance Problems

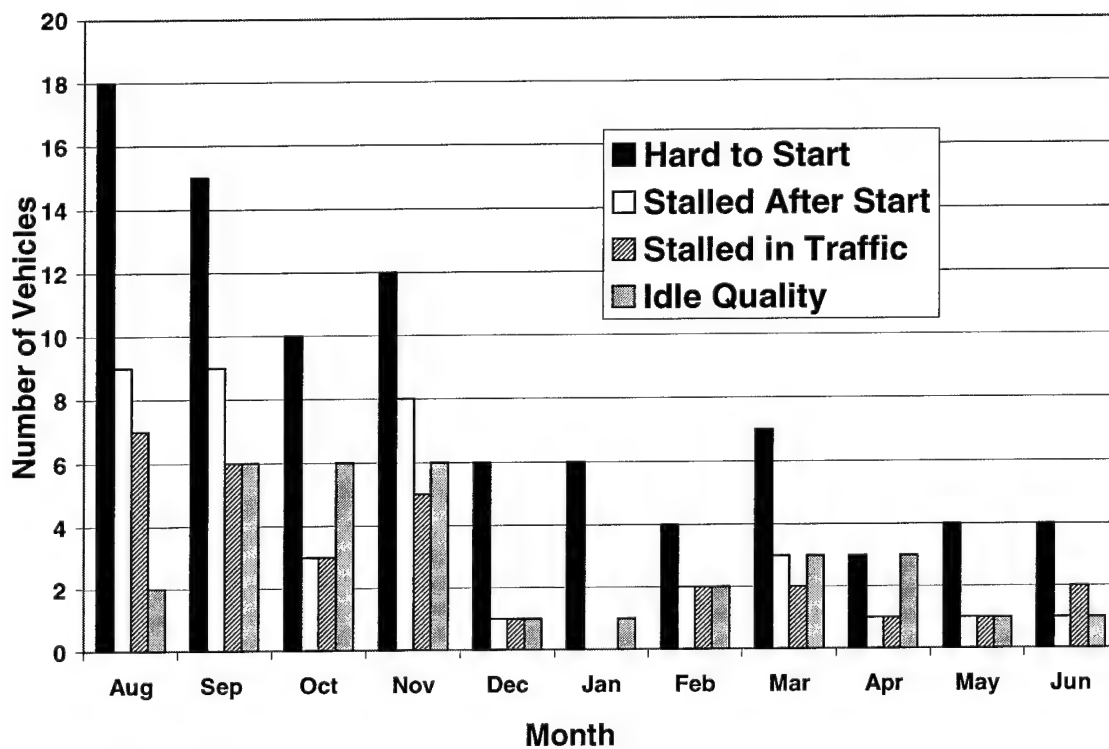


Figure 11. Vehicles Reporting Some Kind of Performance Problem



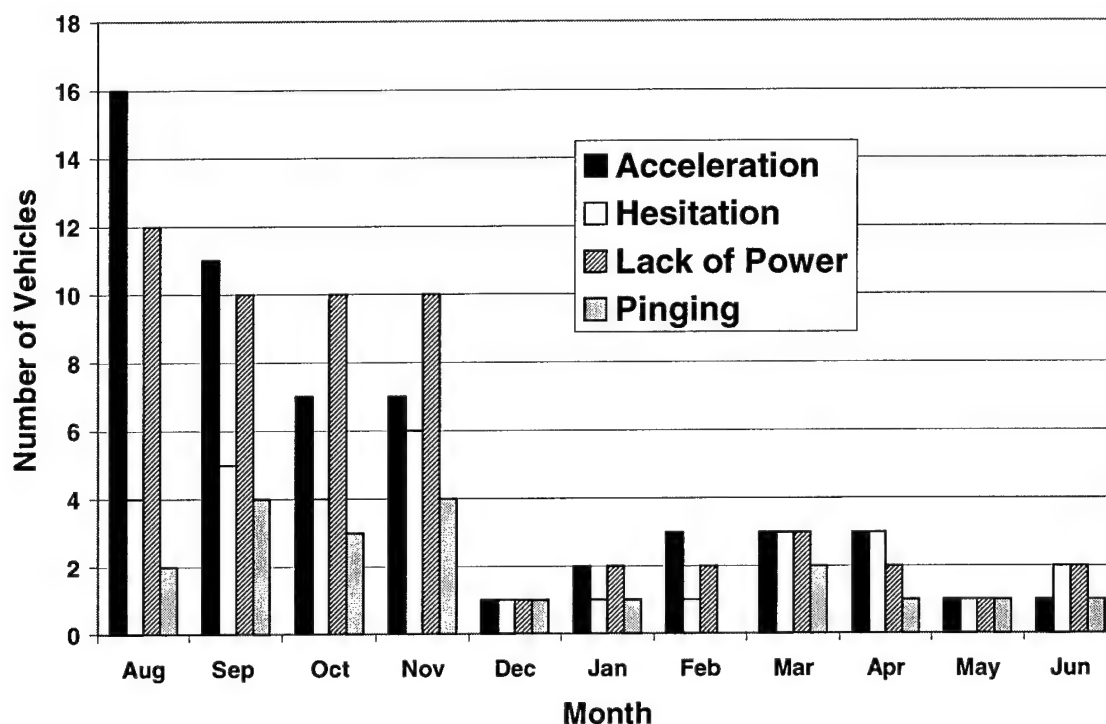


Figure 12. Vehicles Reporting Some Degree of Performance Problem

#### a. Cold/Hot Start Tests

Two cold and two hot starts were performed on a single bifuel vehicle. The engine cranking time to start was recorded in seconds. Results demonstrated that, while using CNG fuel, the cranking time required to start the engine increased an average of 2 seconds during the cold-start phase and 1.6 seconds during the hot-start phase. Figures 13 through 16 show the individual and averaged cold/hot start test results.

#### b. 0-50mph Full-throttle Acceleration Tests

Full-throttle acceleration tests measure the time required to reach a given speed. The acceleration times of a given engine are a function of the work produced by the engine. The developed work and subsequent rate of work (power) are a function of the volume and energy of the injected fuel. The fuel-energy density and the injected volume determine the energy content of the injected fuel. Combustion factors that determine power availability with a fuel are the thermal efficiency of the combus-

tion and the energy conversion processes. The aforementioned factors all contribute to the work and power development of an engine, which affect the vehicle acceleration times when a fuel conversion is made. Power loss was expected because of the lower volumetric heating value of CNG compared to gasoline, therefore the volume of fuel delivered with CNG would have lower energy content than the equivalent gasoline. Full-throttle, 0-50mph accelerations were performed on a single bifuel vehicle using gasoline and CNG fuels. Twelve individual runs were performed with each fuel. Six acceleration runs were performed in each direction. The time in seconds to reach 50 mph was recorded for each run. To stabilize engine temperature and performance, the vehicle was operated a minimum of two miles at normal operating conditions after each of the six acceleration runs. Results of the acceleration runs while operating with CNG versus unleaded gasoline showed that the average elapsed time to accelerate from 0 to 50 mph increased three seconds. These data are summarized in Figures 17 and 18. The increase in acceleration time with CNG is within the expected parameters based on the difference in energy content between CNG and gasoline fuels. (12)

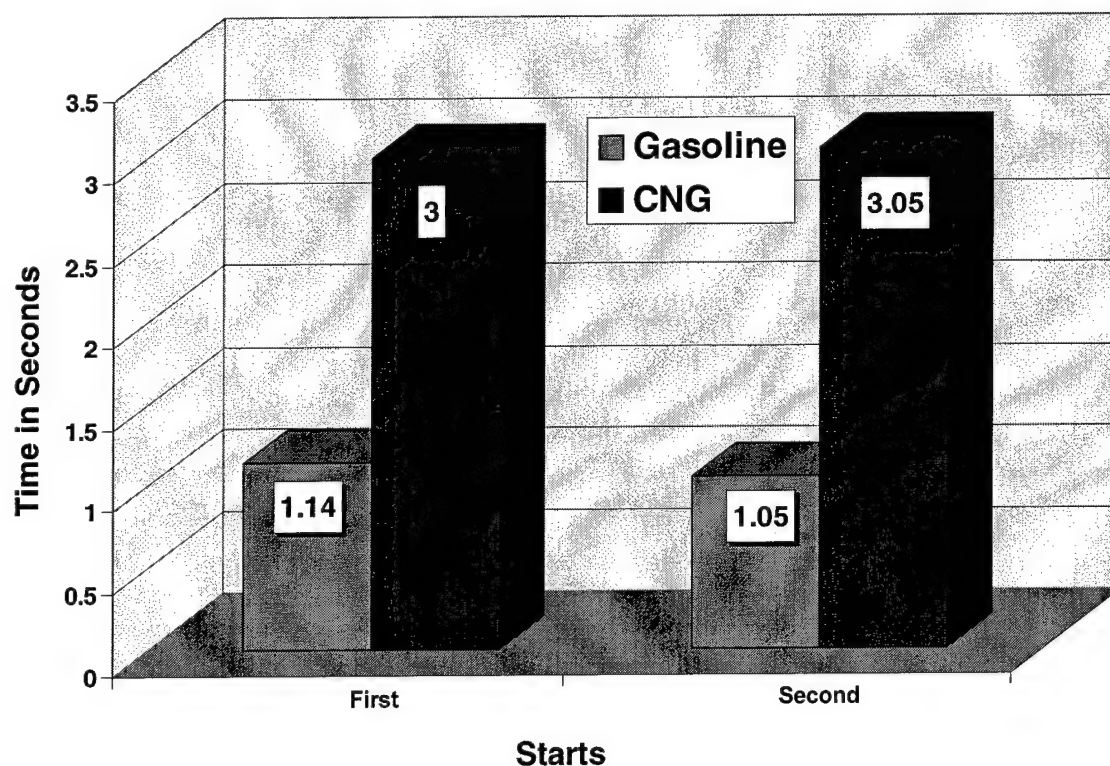


Figure 13. Cold Starts

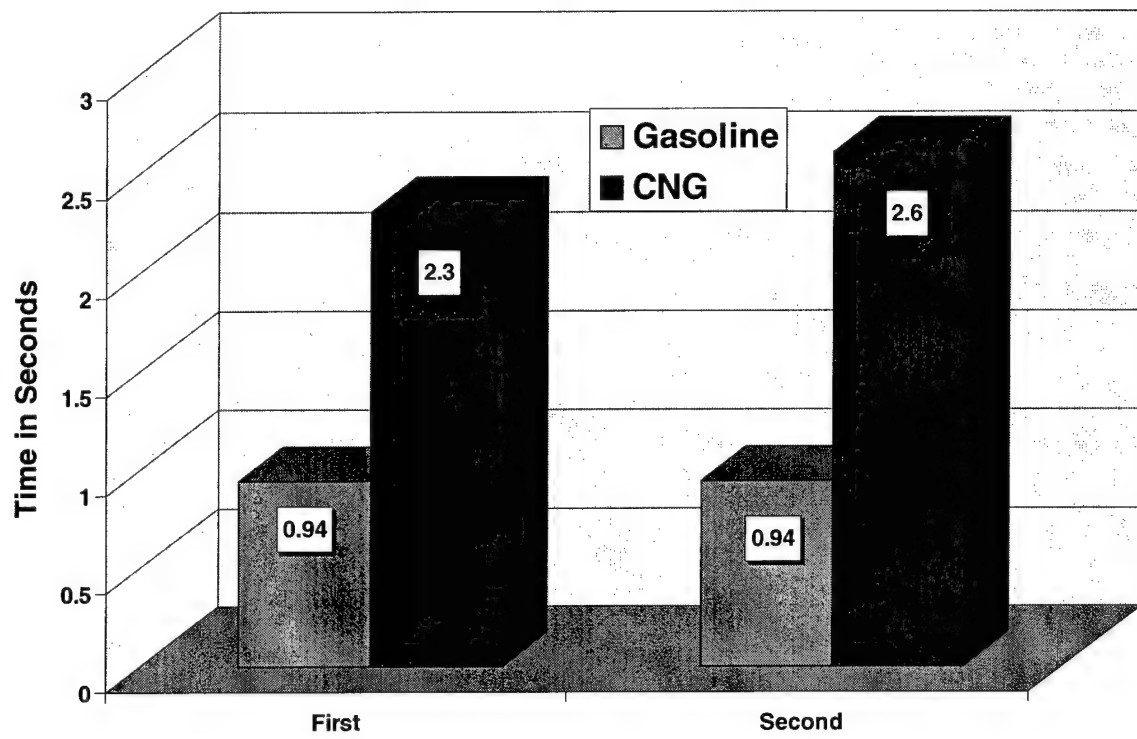


Figure 14. Hot Starts

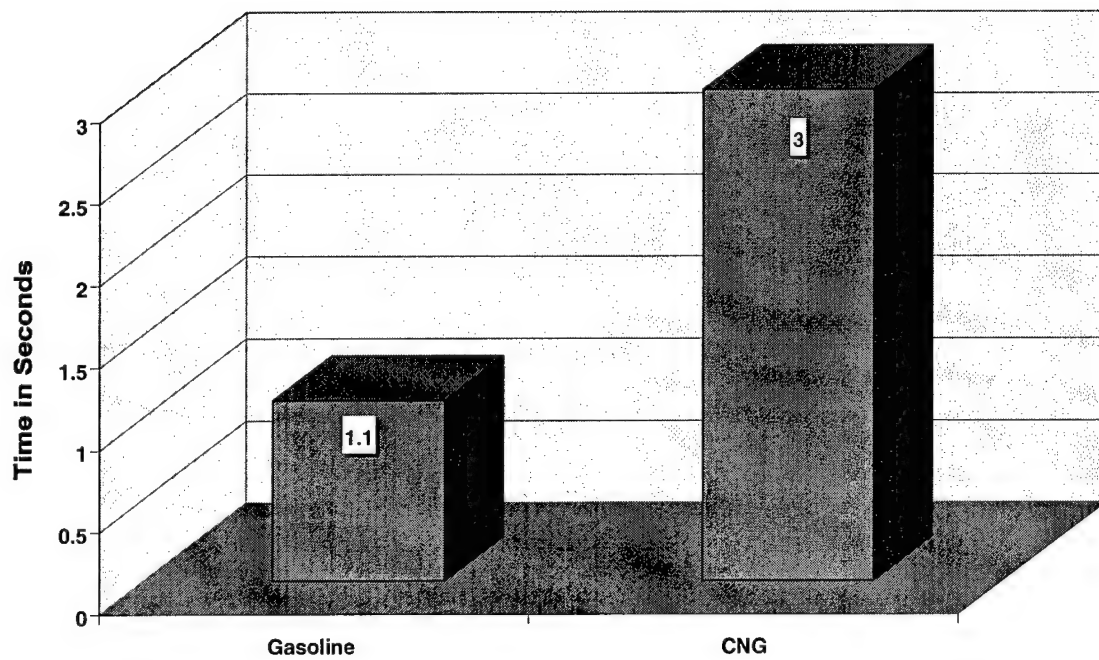


Figure 15. Averaged Cold Starts

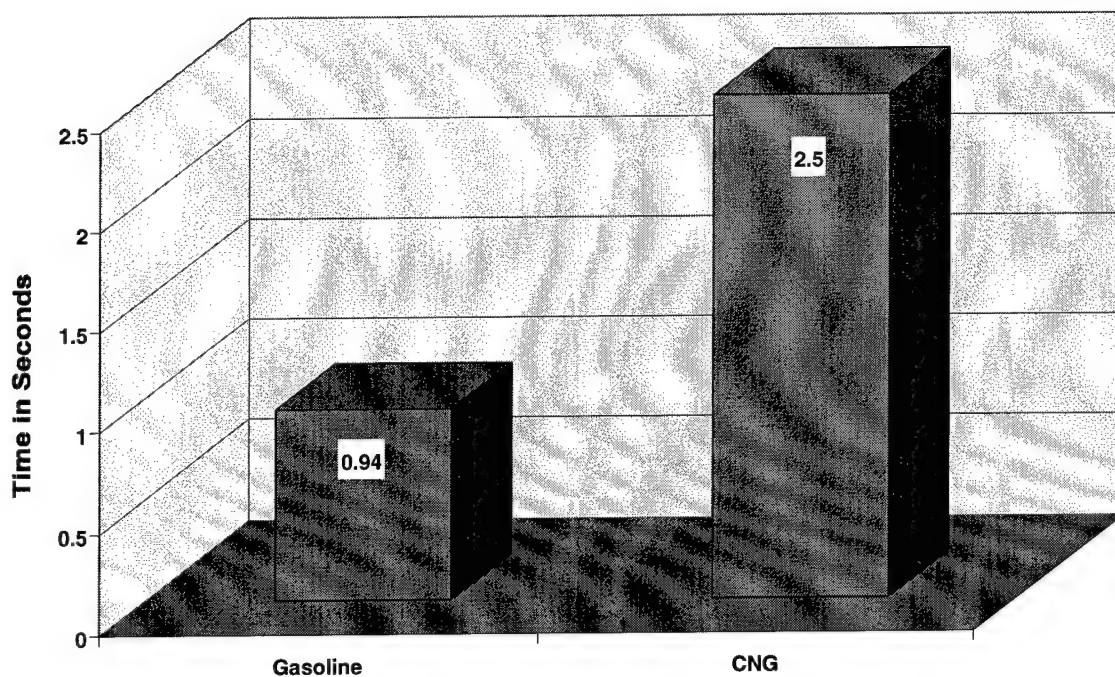


Figure 16. Averaged Hot Starts

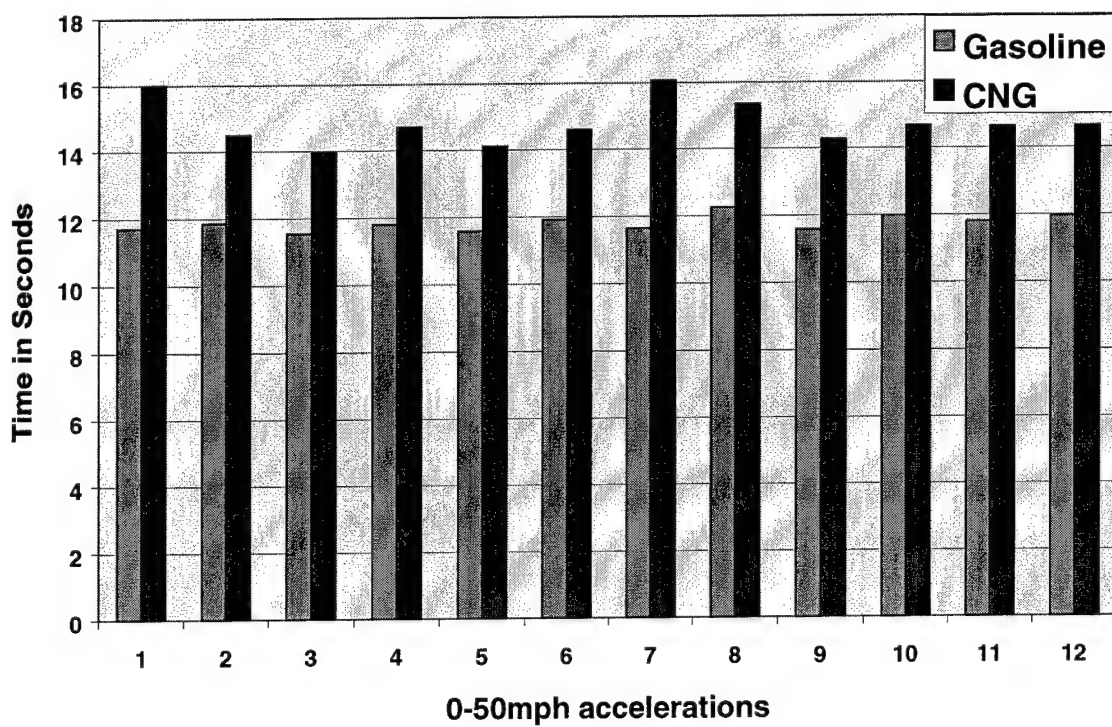
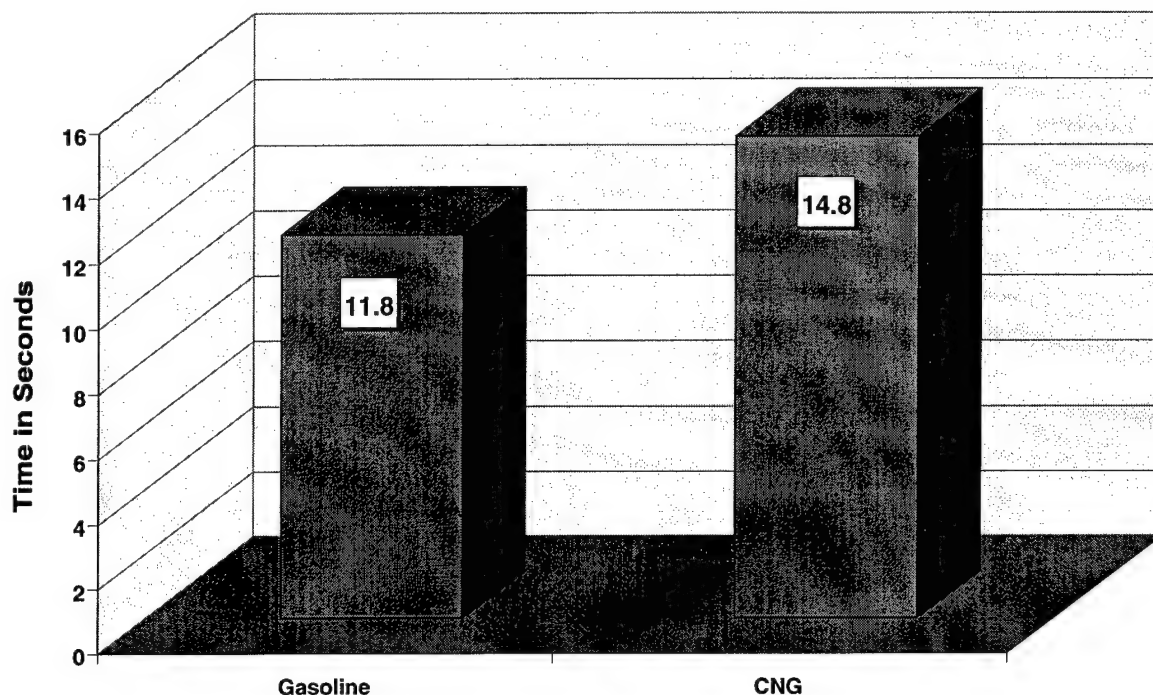


Figure 17. Timed Acceleration Runs



**Figure 18. Averaged 0-50mph Acceleration Runs**

## **6. Fuel Quality**

CNG fuel was monitored by performing compound analyses on samples obtained from the test vehicles that were shipped to SwRI for emissions evaluations. All of the test vehicles were fueled at the same location; therefore, the results of the samples obtained from these vehicles are representative of the CNG fuel quality in El Paso. Table 5 presents the results of the compounds found in the samples. Methane constituted 94 percent of the gas composition, while constituents such as ethane, nitrogen, carbon dioxide, and propane made up the remaining six percent. All the samples conformed to the typical volumetric and mass base composition of natural gas. (13)

## **B. Emissions Testing**

### **1. General**

The objective of testing the exhaust and evaporative emissions was to provide a method to compare the unburned hydrocarbons while operating with both CNG and gasoline fuels, and assess the benefits and/or penalties of using CNG as an alternative fuel.

Table 5. Fort Bliss CNG Fuel Samples					
	Mole Percent				
Constituent	12/11/95	2/26/96	8/27/96	7/28/97	Average
Methane	93.88	93.94	94.16	93.16	93.79
Ethane	2.95	2.85	2.92	2.85	0.89
Propane	0.53	0.41	0.38	0.37	0.42
Butane	0.10	0.07	0.07	0.06	0.07
Iso-Butane	0.06	0.05	0.04	0.04	0.05
Pentane	0.03	0.02	0.01	0.02	0.02
Iso-Pentane	0.03	0.02	0.01	0.02	0.02
Hexane	0.04	0.04	0.04	0.04	0.04
Heptane	0.00	0.00	0.00	0.00	0.00
Octane	0.00	0.00	0.00	0.00	0.00
CO <sup>2</sup>	0.65	0.53	0.72	0.72	0.65
Nitrogen	1.73	2.07	1.66	2.78	2.06
Oxygen	0.00	0.00	0.00	0.00	0.00
Total	100.0	100.0	100.0	100.0	-----

Three test vehicles were selected for emissions testing at 4,000-, 10,000-, and 20,000-mile intervals. The testing was conducted by the Department of Emissions Research at SwRI (an EPA-certified emissions testing laboratory). The vehicles were tested utilizing the FTP schedule for light-duty vehicles. (14)

## 2. FTP Exhaust Emissions and HFET Fuel Economy

The exhaust emissions of three bifuel vehicles were quantified using the Light-Duty Vehicle FTP. The bifuel vehicle emission measurements were determined while operating the vehicles on gasoline and CNG. The exhaust emission measurements were made at 4,000, 10,000, and 20,000 miles for each vehicle. The FTP exhaust emissions and HFET fuel economy results are included as Appendix B.

The averaged FTP unburned exhaust emissions, highway fuel economy test results at three mileage intervals, and overall averaged results are shown in Table 6. Also shown are the EPA's standards for total hydrocarbons (THC [gasoline exhaust only]), non-methane hydrocarbons (NMHC), carbon monoxide (CO), and oxides of nitrogen (NO<sub>x</sub>).

Figure 19 compares the averaged FTP unburned hydrocarbons emissions with the EPA's standards for light duty vehicles. The THC standard applies to gasoline fuel only.

**Table 6. Averaged Unburned FTP Regulated Emissions and Highway Fuel Economy Test (HFET) Results of Three Bifueled Vehicles at 4,000-, 10,000-, and 20,000-Mile Intervals**

Test Fuel Miles	Gasoline				CNG			
	4,000	10,000	20,000	Average	4,000	10,000	20,000	Average
<b>Exhaust Emissions</b>								
THC, g/mile	0.52	0.53	0.44	0.5	2.7	2.62	2.48	2.6
NMHC, g/mile	0.37	0.38	0.34	0.36	0.06	0.01	0.02	0.03
CO, g/mile	5.41	4.01	3.59	4.34	1.12	1.43	1.82	1.46
Nox, g/mile	0.66	0.74	0.8	0.73	0.78	0.78	0.85	0.8
NMOG, g/mile	0.41	0.44	0.36	0.4	0.11	0.14	0.13	0.13
HFE, mpg	22.83	24.27	24.51	23.87	23.04	24.11	22.87	23.34

### **EPA Standards**

THC, 0.8 g/mile\*

NMHC, 0.32 g/mile

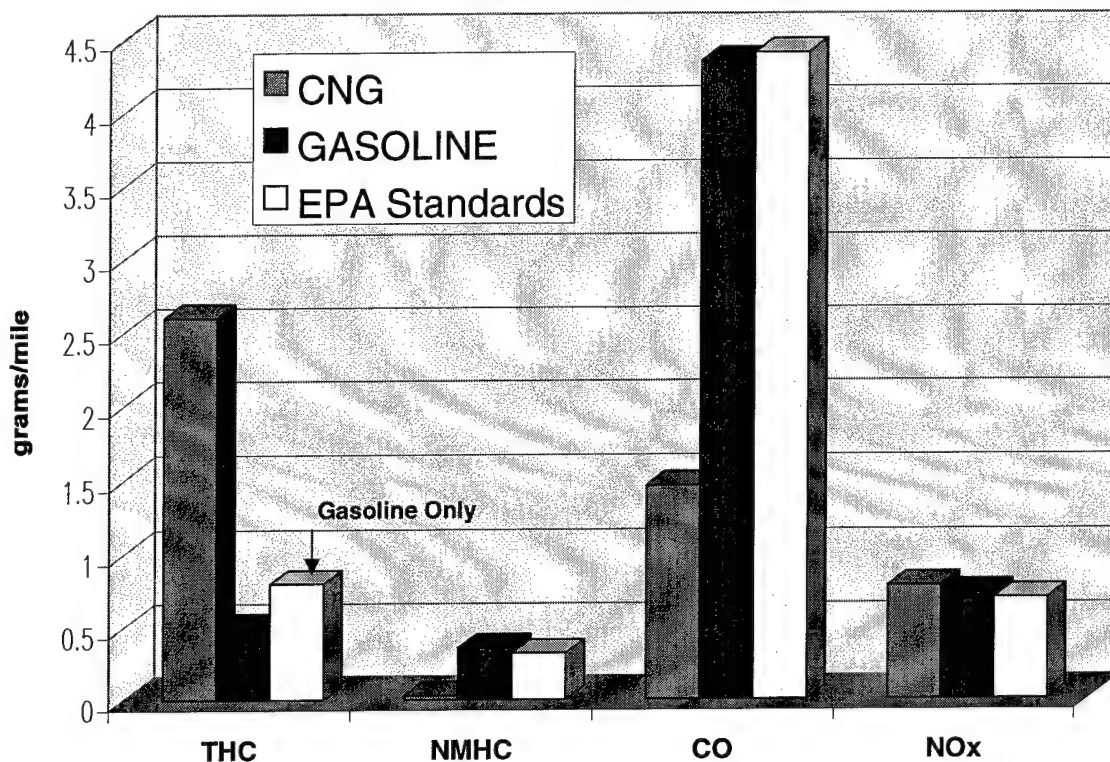
CO, 4.4 g/mile

Nox, 0.7 g/mile

\* = Gasline Only



## Comparison of Averaged FTP Unburned Hydrocarbon Emissions Results



**Figure 19. Comparison of Averaged FTP Unburned Hydrocarbon Emissions Results**

Figure 20 shows the averaged unburned hydrocarbon emissions at three mileage intervals for the three vehicles. Figure 20 reveals the Total Hydrocarbon (THC), Non-Methane Organic Gas (NMOG), and Non-Methane Hydrocarbon (NMHC) response for each fuel. As expected, the THC response is substantially higher for CNG use. The NMOG and NMHC results indicate substantial reductions in higher molecular weight hydrocarbon emissions when CNG is used. Figure 21 shows the THC emissions for each vehicle and fuel at each mileage interval evaluated. Figure 22 displays NMHC emissions for each vehicle and fuel at each mileage interval. Figures 21 and 22 indicate that when gasoline was used vehicle 72031 showed reductions in hydrocarbon emissions with mileage, vehicle 72038 showed fairly consistent results at each mileage interval, and vehicle 72051 revealed increasing hydrocarbon emissions as mileage increased. Figures 21 and 22 also indicate that when CNG was utilized, vehicle 72031 showed fairly consistent results for THC, and decreasing NMHC, at each mileage interval; vehicles 72038 and 72051 revealed decreasing THC emissions, but increasing NMHC as mileage increased.



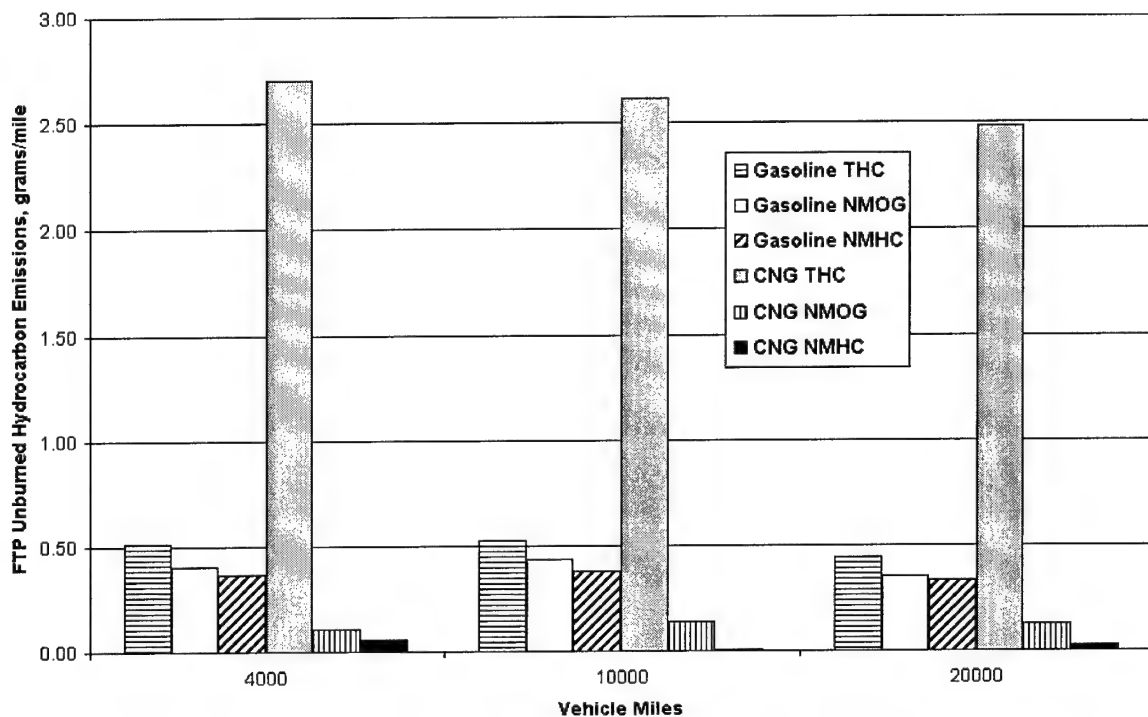


Figure 20. Averaged FTP Unburned Hydrocarbon Emissions

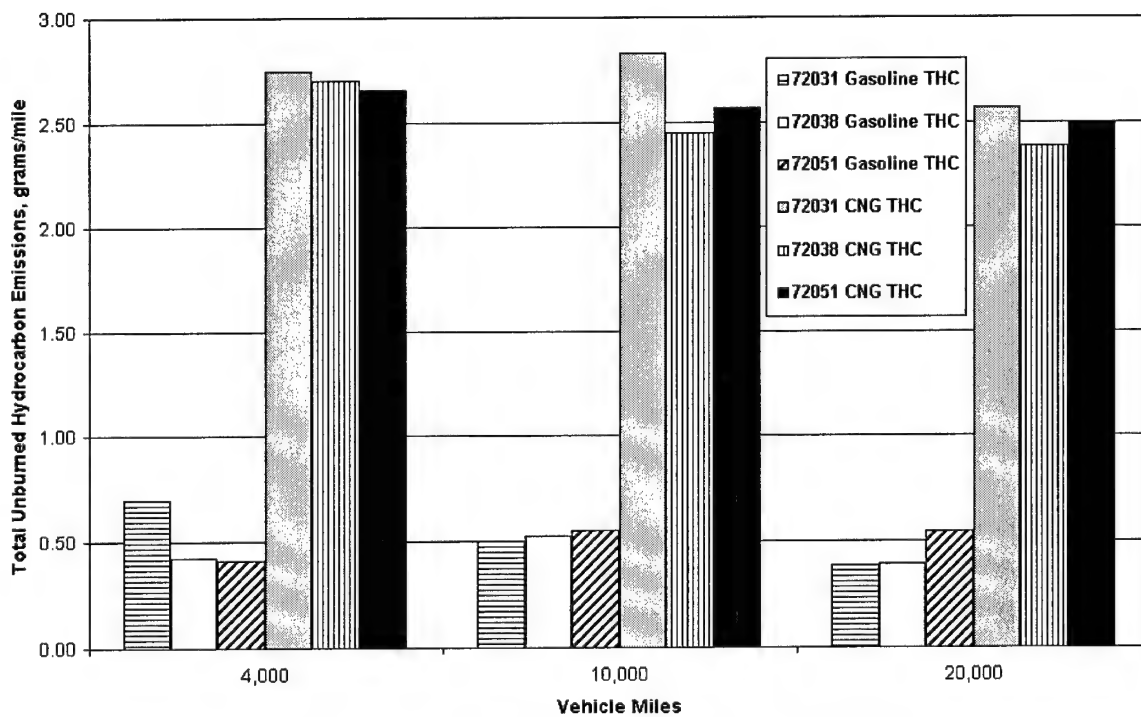
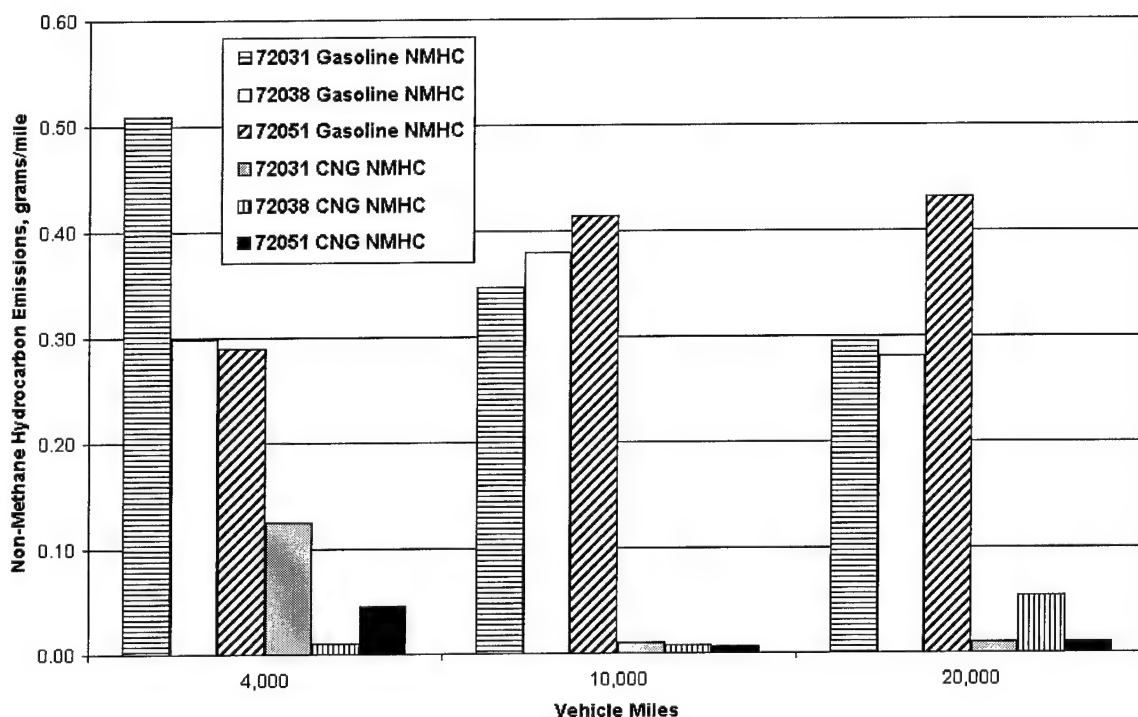


Figure 21. FTP Total Unburned Hydrocarbon Emissions



**Figure 22. FTP Non-Methane, Hydrocarbon Emissions**

The carbon monoxide (CO) emissions for each vehicle, fuel, and mileage interval are shown in Figure 23. When using gasoline, CO emissions dropped with increasing mileage for vehicles 72031 and 72038, and increased with mileage for vehicle 72051. When using CNG, CO emissions generally increased with increasing mileage for all vehicles, but remained at levels lower than with gasoline use.

The oxides of nitrogen (NOx) emissions for each vehicle, fuel, and mileage interval are shown in Figure 24. When using gasoline, NOx emissions dropped with increasing mileage for vehicle 72031, and generally increased with mileage for vehicles 72038 and 72051. When using CNG, NOx emissions for vehicle 72031 remained fairly consistent, and generally increased with increasing mileage for vehicles 72038 and 72051. Overall, the NOx emission levels with CNG were slightly higher than with gasoline use.

The Federal Light-Duty HFET was also performed on each vehicle, fuel, and mileage combination. Figure 25 reveals the fuel economy results for each vehicle, fuel, and mileage interval. Except for vehicle 72051, vehicle fuel economy with gasoline improved with increasing mileage. With CNG

utilization, all vehicles showed an improvement in fuel economy at the 10,000-mile interval, followed by a reduction in fuel economy at the 20,000-mile interval. Figure 26 shows the vehicle averaged fuel economy for both fuels at each mileage interval, and the overall average. The overall average fuel economy is slightly higher for gasoline utilization.

Figure 27 is an overall summary of the bifuel vehicle emission and fuel economy deviations between gasoline and CNG. Overall, the exhaust emission levels were fairly consistent at each mileage interval regardless of fuel utilized. The vehicles operating on CNG showed dramatic reductions in non-methane organic gas (-65%), non-methane hydrocarbons (-91.4%), and carbon monoxide (-66.4%) emissions compared to gasoline operation. The vehicles operating on CNG revealed a small increase for oxides of nitrogen (6.4%) emissions compared to gasoline operation. The vehicles with CNG fuel operation revealed a marginally lower fuel economy (-2.2%) than when operated on gasoline. Generally, the fuel economy for each vehicle and fuel combination increased slightly between the 4,000- and 10,000-mile intervals, then remained consistent or declined between the 10,000- and 20,000-mile intervals.

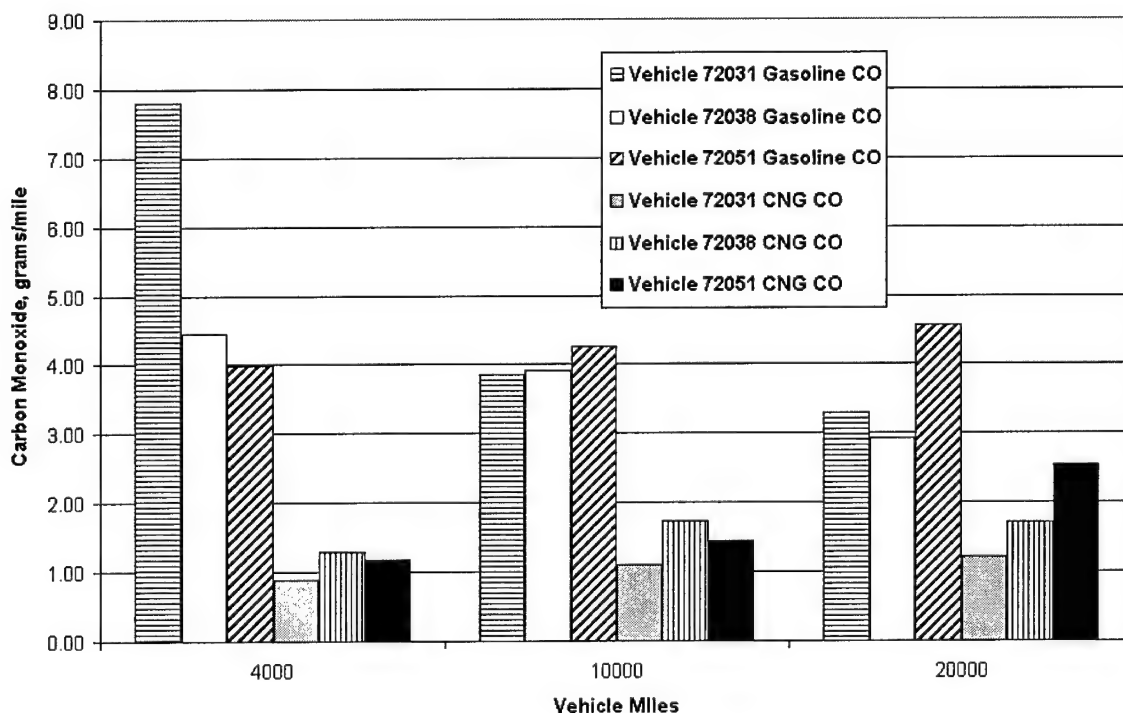


Figure 23. Carbon Monoxide Emissions

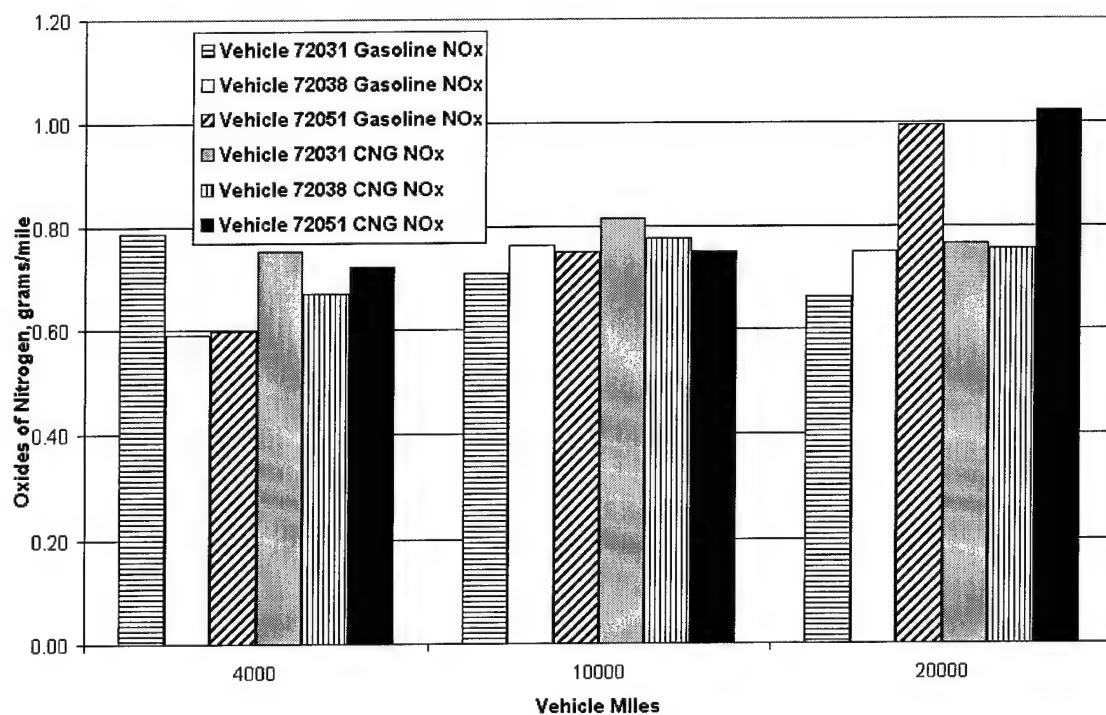


Figure 24. Oxides of Nitrogen Emissions

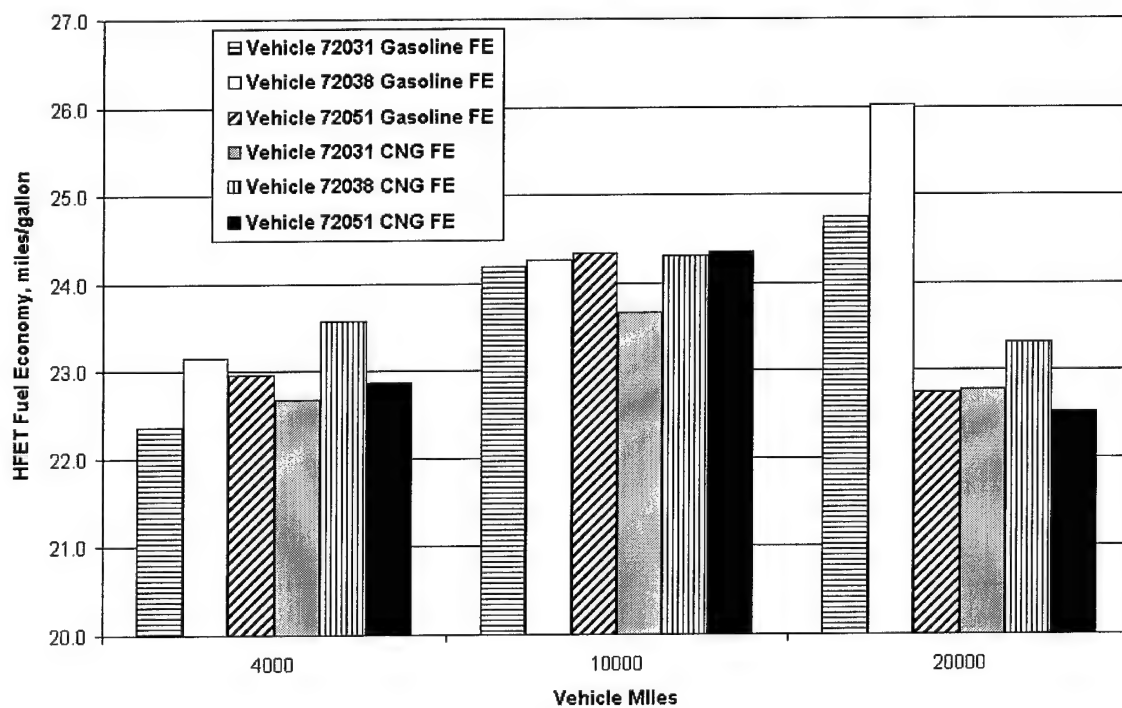


Figure 25. HFET Fuel Economy

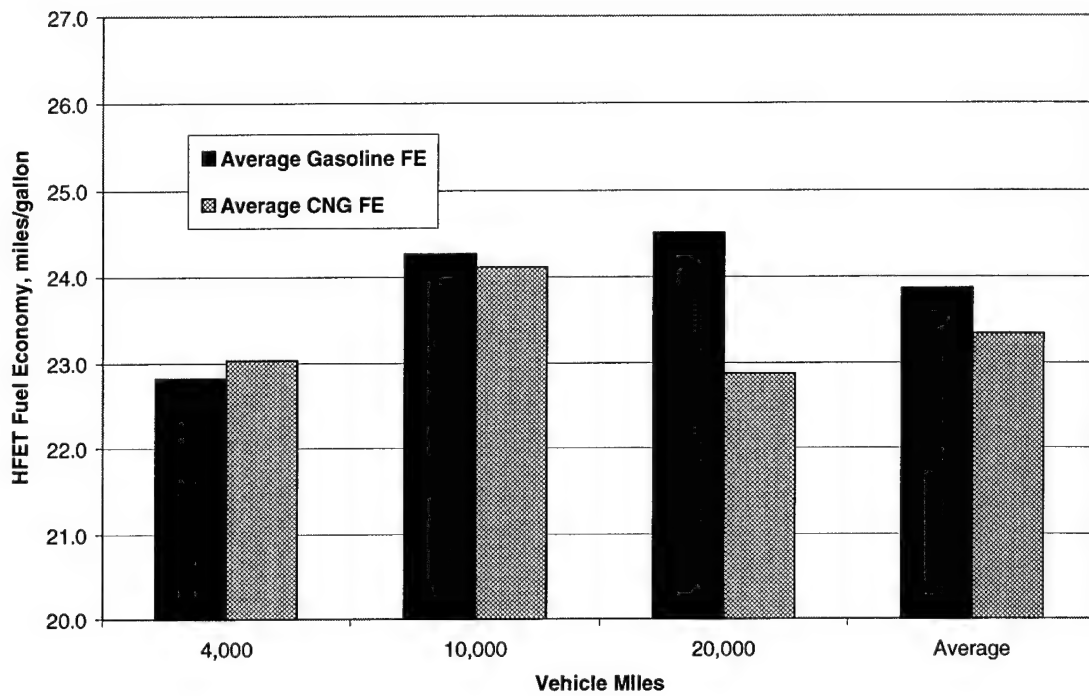


Figure 26. Average HFET Fuel Economy

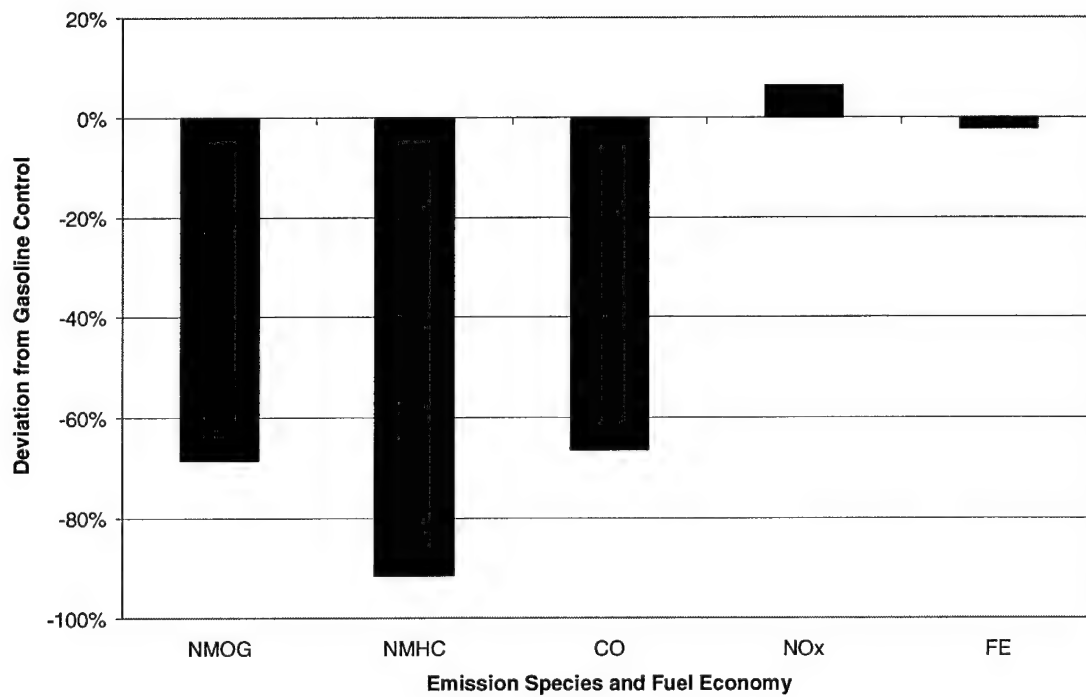


Figure 27. Bi-Fuel Vehicle Emissions and Fuel Economy Deviations with CNG

### 3. Species Emissions

Total unburned hydrocarbon FTP exhaust emissions for the three bifuel vehicles are tabulated in Appendices C-E. The selected species compounds complied with NREL data collection guidelines (15) for the fuel each vehicle utilized and are tabulated in Appendix (F). The results of the speciation were utilized to calculate the ozone-forming potential for each vehicle and fuel. The potential ozone formed was calculated using Maximum Incremental Reactivity (MIR) factors for the Los Angeles air basin model published by Mobile Sources Division, California Air Resources Board. (16)

Figure 28 shows the averaged potential grams of ozone formed per mile for each fuel, at each mileage interval. Ozone was calculated accounting for potential ozone formed from methane and NMOG emissions. Total potential ozone includes the contribution of the methane in the exhaust. Although methane has a very low MIR (0.0148g O<sub>3</sub>/g vs. ethylene at 7.29g O<sub>3</sub>/g), the substantial mass of methane in CNG exhaust makes methane a major contributor to CNG vehicle ozone-forming potential. The potential ozone formed by NMOG in Figure 28 reveals the ozone-forming potential of the bifuel vehicle exhaust when debited for methane contribution.

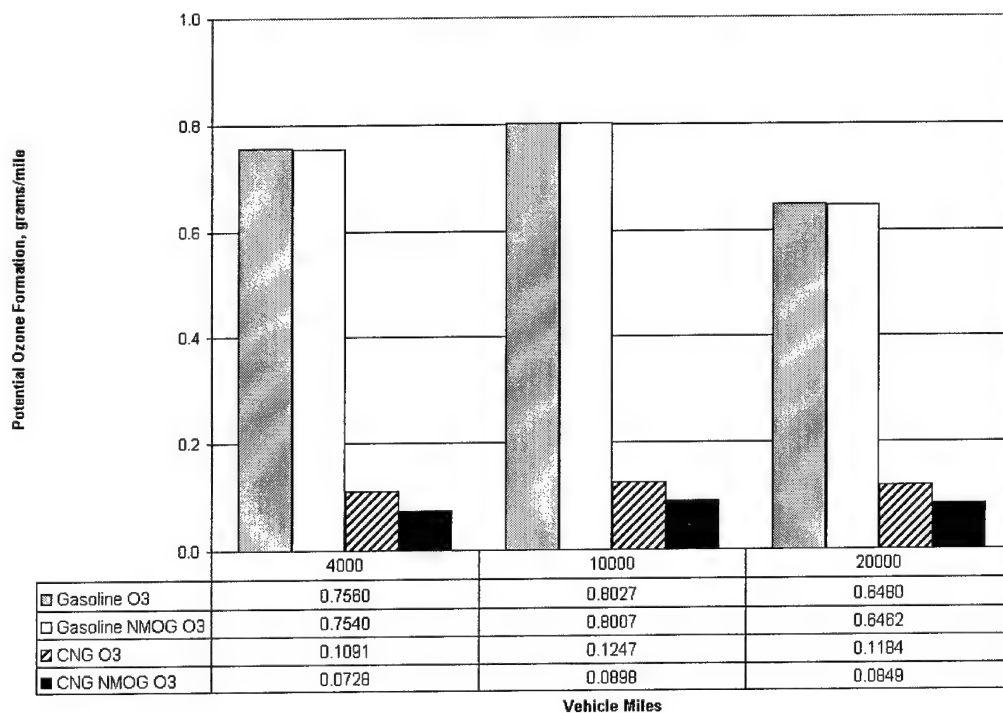


Figure 28. Vehicle Average Potential Ozone Formation, gms/mile

Approximately 89 percent of the potential ozone formed by CNG exhaust emissions is due to the following compounds: methane (28.9%), ethylene (22.6%), ethane (19.6%), formaldehyde (10.7%), propane (4.0%), and propylene (3.5%) in the exhaust. Likewise only 41-percent potential ozone formed by gasoline exhaust emissions is due to the following compounds: methane (0.3%), ethylene (22.0%), ethane (0.7%), formaldehyde (3.0%), propane (0.1%), and propylene (15.1%). The balance of potential ozone formed by the gasoline vehicle is from higher molecular weight hydrocarbons containing double and triple bonds, with toluene (27.3%) being the largest contributor. The averaged potential ozone contributions of the three bifuel vehicles for gasoline and CNG (by species, at each mileage interval) and the overall average are shown in Table 7.

Table 7. Contribution to Ozone-Forming Potential from Speciated Emissions									
Fuel	Gasoline					CNG			
Mileage	4,000	10,000	20,000	Avg.		4,000	10,000	20,000	Avg.
Total O3, g/mile	0.7560	0.8027	0.6480	0.7356		0.1081	0.1247	0.1184	0.1174
Species Ozone Contribution, %									
Methane	0.3	0.2	0.3	0.3		31.7	27.2	27.6	28.9
Ethylene	23.1	20.6	22.3	22.0		21.5	20.8	25.6	22.6
Ethane	0.5	0.8	0.8	0.7		17.5	20.5	20.8	19.6
Acetylene	0.2	0.2	0.2	0.2		0.0	0.0	0.0	0.0
Propylene	15.8	15.1	14.4	15.1		4.1	3.4	3.0	3.5
Propane	0.1	0.1	0.1	0.1		4.8	3.5	3.7	4.0
Propadiene	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Isobutane	1.3	1.5	1.1	1.3		1.8	1.6	1.5	1.6
Isobutylene	6.1	6.0	7.5	6.5		0.7	0.6	1.3	0.9
1-Butene	2.6	2.1	2.1	2.3		0.7	0.6	0.5	0.6
1,3-Butadiene	0.4	0.4	0.6	0.5		0.5	0.3	0.3	0.4
Butane	0.6	1.1	1.0	0.9		2.0	1.4	1.8	1.7
Trans-2-Butene	3.6	2.9	2.3	3.0		1.1	0.8	0.8	0.9
Neopentane	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
CIS-2-Butene	5.2	3.3	2.8	3.7		0.4	0.8	0.8	0.7
3-Methyl-1-Butene	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Isopentane	9.9	8.1	8.4	8.8		2.6	1.1	2.4	2.0
1-Pentene	0.2	0.2	0.3	0.2		0.0	0.0	0.0	0.0
2-Methyl-1-Butene	0.3	0.2	0.4	0.3		0.0	0.0	0.0	0.0
Pentane	0.8	1.3	1.2	1.1		0.4	0.2	0.5	0.4
Benzene	0.9	1.3	0.8	1.0		0.0	0.0	0.0	0.0
Toluene	24.4	28.5	28.9	27.2		1.7	0.0	0.4	0.7
Ethylbenzene	0.9	0.9	0.9	0.9		0.0	0.0	0.0	0.0
Formaldehyde	2.0	4.0	2.9	3.0		8.1	15.6	8.4	10.7
Acetaldehyde	0.6	1.0	0.8	0.8		0.5	1.4	0.4	0.8

The mileage variation of NMOG mass emissions for each vehicle and fuel are shown in Figure 29. Except for vehicle G24-72051, the gasoline NMOG emissions generally decreased with mileage accumulation. While operating on CNG, the vehicles displayed increased NMOG emissions with mileage accumulation. The corresponding mileage variation of potential ozone formation by the NMOG constituents for each vehicle and fuel are displayed in Figure 30.

Figure 31 displays the Specific Reactivity (SR) for each vehicle and fuel at each mileage interval. The SR is a measure of the potential ozone reactivity of the NMOG emissions of a vehicle and fuel combination. The SR is defined in Reference (16) for a fuel as the summation of the mass of potential ozone formed by the individual NMOG species, divided by the summation of the emitted mass of the individual NMOG species as shown below.

$$SR_{fuel} = \frac{\sum_{fuel} \frac{g \text{ NMOG}_i}{\text{mile}} \times MIR_i \left( \frac{g \text{ O}_3}{g \text{ NMOG}} \right)}{\sum_{fuel} \frac{g \text{ NMOG}_i}{\text{mile}}} = \frac{g \text{ O}_3}{g \text{ NMOG}}$$

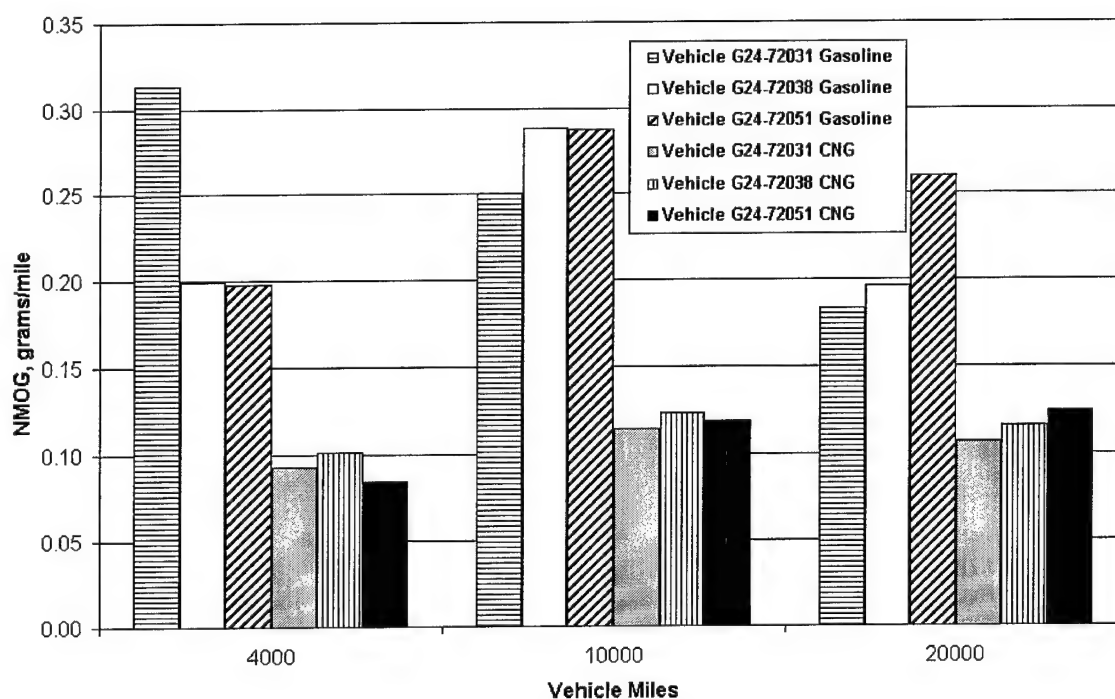


Figure 29. Total Mass Emission of NMOG Species



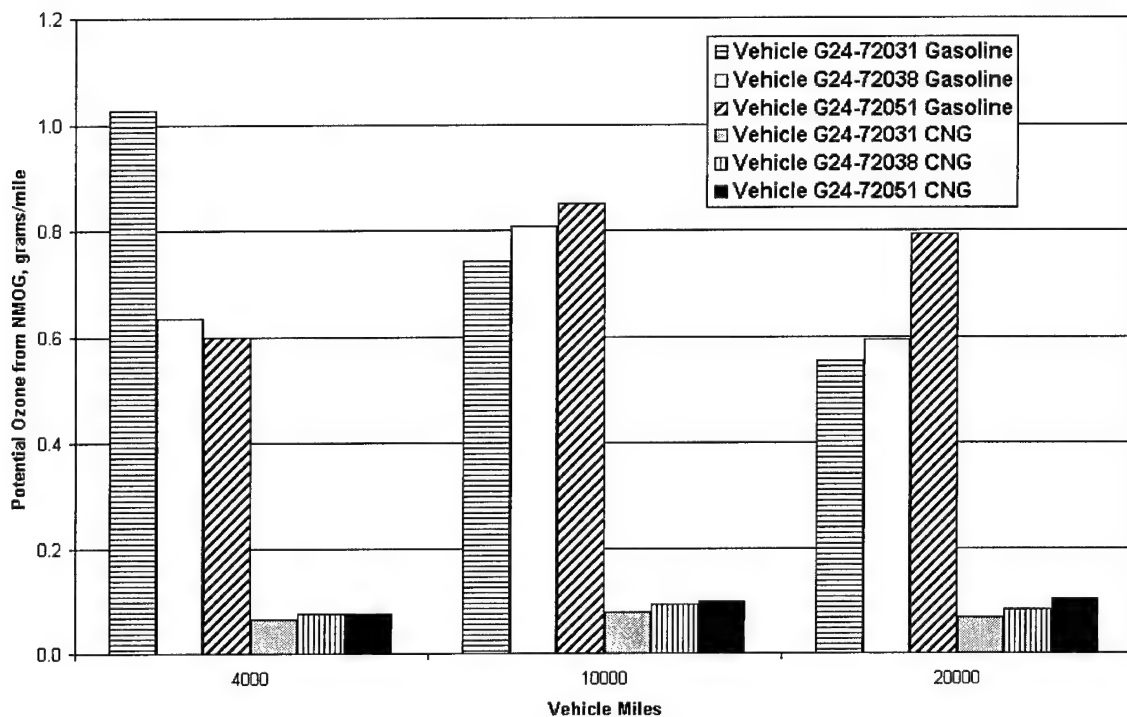


Figure 30. Potential Ozone Formation from NMOG Constituents

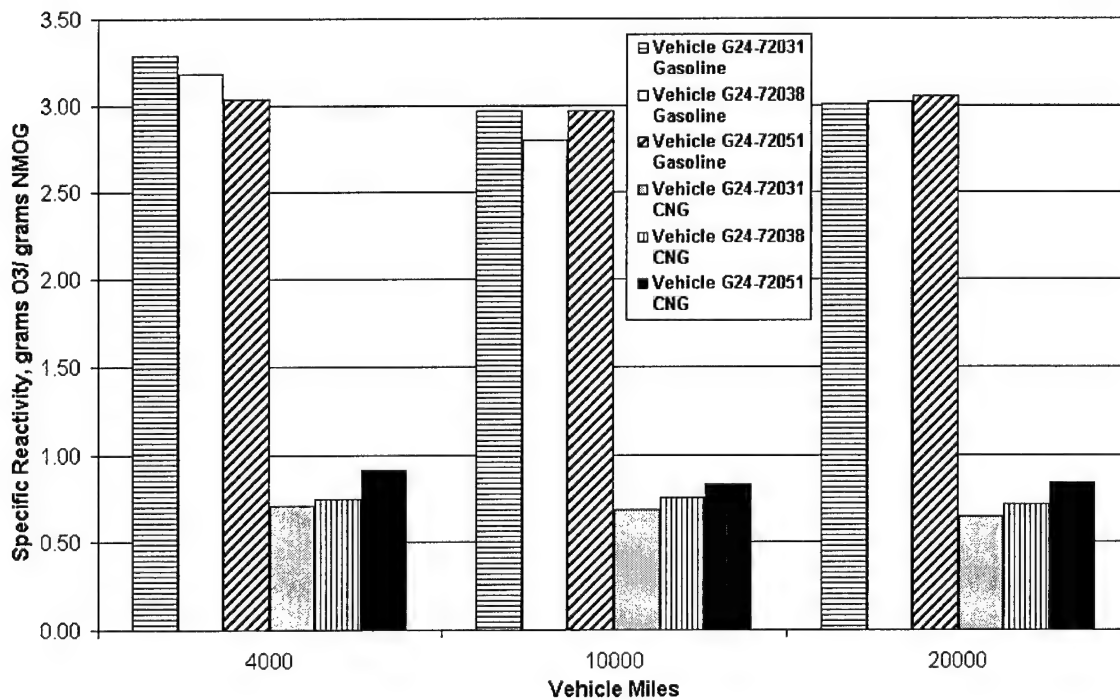


Figure 31. Specific Reactivity of NMOG Emissions

Reference (16) defines the Reactivity Adjustment Factor (RAF) for alternative-fuel vehicles, which compares the SR of an alternative fuel, to the SR of the reference fuel. In this case, the RAF is calculated for CNG utilization as follows using the SRs for CNG and gasoline.

$$RAF_{CNG} = \frac{SR_{CNG}}{SR_{Gasoline}} = \frac{0.7589 \frac{gO_3}{gNMOG}}{3.0335 \frac{gO_3}{gNMOG}} = 0.25$$

The RAF indicates that the Ft. Bliss bifuel vehicles have ozone-forming potential from the NMOG constituents while operating on CNG, which is only 25 percent of, or 75 percent lower than, gasoline operation. The corresponding mileage variation of the CNG fuel RAF for each vehicle and the averages are displayed in Figure 32. The Ft. Bliss bifuel vehicle CNG RAF value is substantially lower than the CARB generic RAF value for CNG vehicles of 0.43 proposed in Reference 14. The CARB generic RAF value was an average RAF for seven unique CNG vehicles. The current data also contrasts with the earlier Ft. Bliss CNG study, Reference 7, that indicated a 0.47 RAF value. The earlier Ft. Bliss study utilized dedicated CNG vehicles versus the bifuel vehicles in the present study.

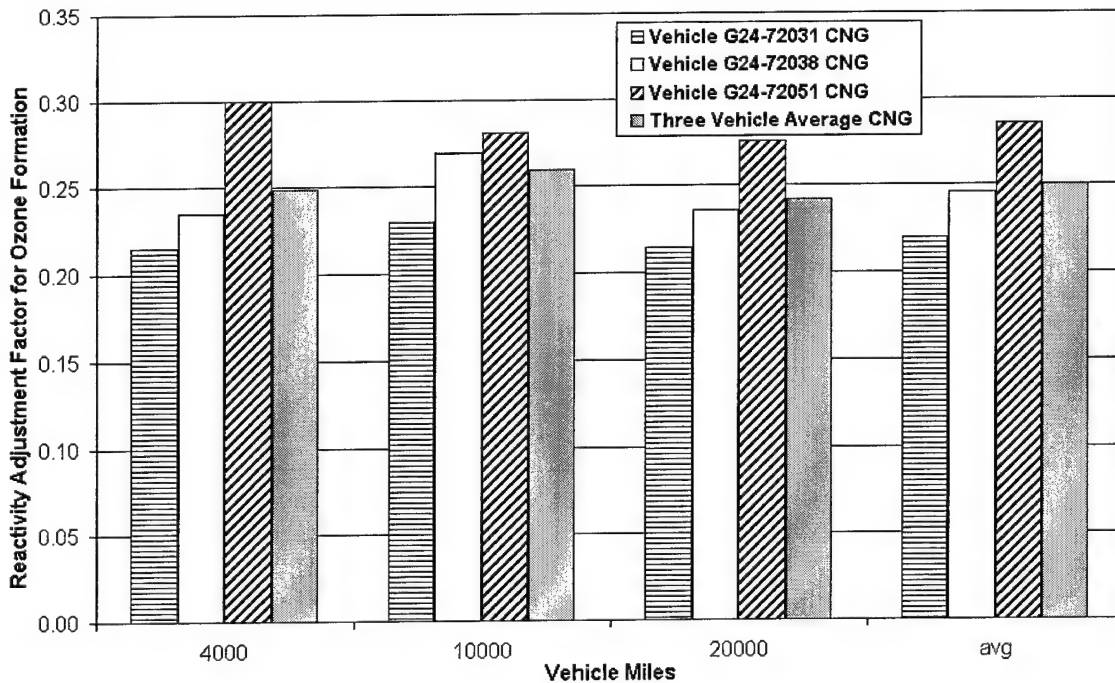


Figure 32. Reactivity Adjustment Factor for CNG Operation

## VI. CONCLUSIONS

Use of the Ford F150 QVM bifuel vehicle at Ft. Bliss, Texas demonstrated that operation of bifuel vehicles in support of post-camp and station operations is feasible and prudent. The ability of the bifuel vehicles to use either compressed natural gas (CNG) or gasoline permitted the assignment of the vehicles to sections with areas larger than the maximum range of the vehicle in the CNG mode. The bifuel vehicles were readily accepted as a viable alternative to the dedicated gasoline vehicle.

The Ford bifuel vehicles proved to be highly reliable in that only two fuel-component maintenance actions were recorded during the 24-month period in which maintenance data were tracked. This statement contradicts the amount of performance problems reported by the drivers at the beginning of the demonstration. However, there is always the usual resistance exhibited by drivers when a fleet is changed over from a trusted fuel such as gasoline to an "experimental" fuel such as CNG with a limited track record. The drivers' most prevalent performance problems reported while operating with CNG were hard starting, lack of power, and acceleration. Hot/cold starts and full throttle acceleration tests were performed on one bifuel vehicle. Results indicated that the cranking time in the CNG mode increased an average of 1.8 seconds, and acceleration time to reach 50 mph during the full throttle evaluations increased 3 seconds. According to the General Services Administration (GSA) maintenance automotive technicians, the only variable that was noticeable was the longer starting time in the CNG mode. Lack of power and hesitation were not noticeable under normal operating conditions with either CNG or gasoline.

The averaged combined CNG and gasoline fuel economy calculated from actual usage data shows an 11-percent decrease compared to the combined Federal Test Procedure (FTP) results. This difference can be attributed to the short start-and-stop duty cycle of the test vehicles during the demonstration program.

The exhaust emission levels were fairly consistent at each mileage interval regardless of fuel used. The vehicles operating on CNG demonstrated significant reductions in non-methane organic gas (NMOG), non-methane hydrocarbons (NMHC), and carbon monoxide (CO) emissions compared to gasoline operation. Operation with CNG, however, reveals a slight increase in oxides of nitrogen (NOx) emissions compared to gasoline operation.

The speciated emissions allow the calculation of a Reactivity Adjustment Factor (RAF), as defined by the California Air Research Board, for potential ozone formation from NMOG for the Ft. Bliss bifuel vehicles operating on CNG. The RAF suggests bifuel vehicle operation is providing only 25-percent of, or 75-percent less than, the potential ozone that gasoline operation would produce from the NMOG exhaust constituents.

The benefits in utilizing CNG as a primary fuel outweigh the use of gasoline. However, CNG usage at Ft. Bliss was only 25 percent compared to gasoline usage. The main reason for this disparity was that the CNG-fueling facility, located in a traffic-congested area 5.5 miles outside the installation, became a liability early in the program. Initially, this was not a problem; however, in order to minimize the risk of GSA vehicles being involved in accidents, the use of vehicles outside the installation was discouraged. Also, supervisors began complaining of the time it was taking to fuel the vehicles with CNG compared to gasoline, which was available at the motor pool. Several attempts were made to install a CNG-fueling facility adjacent to the gasoline pumps in the motor pool; however, funding could not be obtained.

## **VII. LIST OF REFERENCES**

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7. Alvarez, R. A. and Yost, D. M., "Technology Demonstration of Dedicated Compressed Natural Gas (CNG) Original Equipment Manufacturer (OEM) Vehicles at Ft. Bliss, Texas," Interim Report TFLRF No. 303, November 1995.
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9. Alvarez, R. A. and Yost, D. M., "Initial Assessment on the Introduction of Oxygenated/Reformulated Gasoline into Department of Defense Vehicles and Equipment," Letter Report BFLRF No. 94-002, October 1994.

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15. Data Collection Responsibilities, Techniques, and Test Procedures, July 1992. NREL/TP-421-4894.
16. State of California Air Resources Board Preliminary Staff Report "Proposed Amendments to Low-Emissions Vehicle Regulations" Mobile Source Division, El Monte, California, 01 May 1995.

**APPENDIX A**  
**MILEAGE AND FUEL USAGE SUMMARIES FOR BIFUEL VEHICLES**



GSA Tag No. 4272027										
Month	Monthly				Cumulative					
	Miles	Gasoline	CNG	mpg	Miles	Gasoline	CNG	mpg		
August (95)	218	15.0		14.5	218	15.0		14.5		
September	618	38.2	8.7	13.2	836	53.2	8.7	13.5		
October	252	21.0		12.0	1088	74.2	8.7	13.1		
November	170	12.0		14.1	1258	86.2	8.7	13.2		
December	153	10.3		14.9	1411	96.5	8.7	13.3		
January (96)	308	16.3	8.2	12.6	1719	112.8	16.9	13.4		
February	249	18.3		13.6	1968	131.1	16.9	13.3		
March	310	20.9		14.8	2278	152.0	16.9	13.5		
April	209	15.2		13.4	2487	167.2	16.9	13.5		
May	459	34.2		13.4	2946	201.4	16.9	13.5		
June	340	14.8		22.9	3286	216.2	16.9	14.1		
July	187	16.7	7.8	7.6	3473	232.9	24.7	13.5		
August	315	8.3	7.8	19.6	3788	241.2	32.5	13.5		
September	375	41.1		9.1	4163	282.3	32.5	13.2		
October	550	26.9	8.2	15.7	4713	309.2	40.7	13.5		
November	247	12.3	8.6	11.8	4960	321.5	49.3	13.4		
December	502	27.0		18.6	5462	348.5	49.3	13.4		
January (97)	554	52.8		10.5	6016	401.3	49.3	13.4		
February	247	26.5		9.3	6263	427.8	49.3	13.1		
March	595	33.5		17.8	6858	461.3	49.7	13.4		
April	395	34.1		11.6	7253	495.4	49.3	13.3		
May	336	33.1		10.2	7589	528.0	49.3	13.1		

GSA Tag No. 4272028										
Month	Monthly				Cumulative					
	Miles	Gasoline	CNG	mpg	Miles	Gasoline	CNG	mpg		
August (95)	757	12.3	42.2	13.9	757	12.3	42.2	13.9		
September	608	23.2	10.6	18.0	1365	35.5	52.8	14.5		
October	280	10.2	9.9	13.9	1645	46.7	62.7	15.0		
November	401	0	34.2	11.7	2046	46.7	96.9	14.2		
December	478	10.7	20.7	15.2	2524	57.4	117.6	14.4		
January (96)	783	10.6	42.6	14.9	3307	68.0	160.2	14.5		
February	545	13.2	30.4	12.5	3852	81.2	190.6	14.2		
March	540	13.1	26.9	13.5	4392	94.3	217.5	14.1		
April	594	5.3	38.4	13.6	4986	99.6	255.9	14.0		
May	265	8.8	7.9	16.7	5251	108.4	263.8	14.0		
June	448	21.1	17.5	12.9	5749	129.5	281.3	14.0		
July	304	20.5	9.3	10.2	6053	150.0	290.6	13.8		
August	401	24.1	19.3	9.2	6454	174.1	309.9	13.3		
September	654	18.5	9.9	23.0	7108	192.6	319.8	13.9		
October	336	20.9	14.8	9.4	7444	213.5	334.6	13.6		
November	336	12.4	27.0	8.5	7780	225.9	361.6	13.2		
December	547	10.7	10.3	26.0	8327	236.6	371.9	13.7		
January (97)	454	29.7	11.0	11.2	8781	266.3	382.9	13.5		
February	522	18.9	22.5	12.6	9303	285.7	405.4	13.4		
March	659	22.4	28.9	12.8	9962	308.1	434.3	13.4		
April	722	21.0	33.5	13.2	10684	329.1	467.8	13.4		
May	841	28.6	25.9	17.5	11525	357.7	493.7	13.5		



GSA Tag No. 4272031									
Monthly					Cumulative				
Month	Miles	Gasoline	CNG	mpg	Miles	Gasoline	CNG	mpg	
August (95)	218	15.3		14.2	218	15.3		14.2	
September	1119	50.0	2.9	21.0	1337	65.3	2.9	19.6	
October	565	49.2		11.5	1902	114.5	2.9	16.2	
November	401	18.7	10.5	13.7	2303	133.5	13.4	15.8	
December	201	14.8		13.6	2504	148.3	13.4	15.5	
January (96)	473	34.2		13.8	2977	182.5	13.4	15.2	
February	460	38.9		11.8	3437	221.4	13.4	14.6	
March	640	47.4		13.5	4077	268.8	13.4	14.4	
April	608	40.5		15.0	4685	309.3	13.4	14.5	
May	437	28.3		15.2	5122	337.6	13.4	14.6	
June	433	37.8		11.4	5555	375.4	13.4	14.3	
July	908		76.1	11.9	6463	375.4	89.5	13.9	
August	327	27.8		11.8	6790	403.2	89.5	13.8	
September	567	35.2		16.0	7357	438.4	89.5	13.9	
October	291	28.9		10.1	7648	467.3	89.5	13.7	
November	230	13.9		16.5	7878	481.2	89.5	13.8	
December	349	33.3	11.0	7.9	8227	514.5	100.5	13.4	
January (97)	313	24.9		12.6	8540	539.4	100.5	13.4	
February	354	24.3		14.6	8894	563.7	100.5	13.4	
March	315	22.1		14.3	9209	585.8	100.5	13.4	
April	382	25.5		15.0	9591	611.3	100.5	13.5	
May	593	37.4		15.7	10184	648.7	100.5	13.6	

GSA Tag No. 4272033									
Monthly					Cumulative				
Month	Miles	Gasoline	CNG	mpg	Miles	Gasoline	CNG	mpg	
August (95)	170	4.5	9.1	12.5	170	4.5	9.1	12.5	
September	348	13.9	7.9	15.9	515	18.4	17.0	14.5	
October	283	18.5		15.2	798	36.9	17.0	14.8	
November	190		17.2	11.0	988	36.9	34.2	13.9	
December	192	4.6	8.2	15.0	1180	41.5	42.4	14.1	
January (96)	371	27.8		13.3	1551	69.3	42.4	13.9	
February	450	34.9		12.9	2001	104.2	42.4	13.6	
March	310	21.7		14.2	2311	125.9	42.4	13.7	
April	293	15.0		19.5	2604	140.0	42.4	14.2	
May	640	41.6		15.3	3244	182.5	42.4	14.4	
June	586	37.6		15.6	3830	220.1	42.4	14.6	
July	374	28.3	15.7	8.5	4204	248.4	58.1	13.7	
August	17.7		17.0	10.4	4381	248.4	75.1	13.5	
September	174	12.9		13.4	4555	261.3	75.1	13.5	
October	233	14.8		15.7	4788	276.1	75.1	13.6	
November	207	18.1		11.4	4995	294.2	75.1	13.5	
December	166	13.0		12.7	5161	307.2	75.1	13.5	
January (97)	145	13.5		10.7	5306	320.7	75.1	13.3	
February	172	17.1		10.1	5478	337.8	75.1	13.3	
March	143	12.4		11.5	5621	350.2	75.1	13.2	
April	330	18.4		17.9	5951	368.6	75.1	13.4	
May	309	30.8		9.9	6260	399.4	75.1	13.1	

GSA Tag No. 4272035									
Monthly					Cumulative				
Month	Miles	Gasoline	CNG	mpg	Miles	Gasoline	CNG	mpg	
August (95)	868	32.7	34.6	12.9	868	32.7	34.6	12.9	
September	732	44.2	6.9	14.3	1600	76.9	41.5	13.5	
October	607	24.0	10.9	17.8	2207	100.9	52.4	14.4	
November	593	46.2		12.7	2800	147.1	52.4	14.0	
December	660	47.0		14.0	3460	194.1	52.4	14.0	
January (96)	330	16.1	9.7	12.8	3790	210.2	62.1	13.9	
February	621	42.0		14.8	4411	252.2	62.1	14.0	
March	829	50.9	14.8	12.6	5240	303.1	76.9	13.8	
April	702	54.2	7.0	13.0	5942	357.3	83.9	13.5	
May	688	54.0		12.7	6630	411.3	83.9	13.4	
June	671	48.1		12.7	7241	459.4	83.9	13.3	
July	694	35.0	32.1	10.3	7935	494.4	116.0	13.0	
August	652	51.6		12.6	8587	546.0	116.0	13.0	
September	499	41.9		11.9	9086	587.9	116.0	12.9	
October	533	37.8	1.9	13.4	9619	624.8	117.9	13.0	
November	450	40.2		13.4	10069	664.9	117.9	12.9	
December	316	25.2		12.5	10385	690.1	117.9	12.9	
January (97)	470	38.0		12.4	10855	728.1	117.9	12.8	
February	586	46.9		12.5	11441	775.0	117.9	12.8	
March	411	50.2		8.2	11852	825.2	117.9	12.6	
April	583	50.7		11.5	12435	879.2	117.9	12.5	
May	444	27.0		11.6	12879	906.5	117.9	12.5	

GSA Tag No. 4272038									
Monthly					Cumulative				
Month	Miles	Gasoline	CNG	mpg	Miles	Gasoline	CNG	mpg	
August (95)	708	35.0	16.4	13.8	708	35.0	16.4	13.8	
September	893	51.3	14.2	13.6	1601	86.3	30.6	13.7	
October	995	54.6	15.0	15.3	2596	140.9	45.6	13.9	
November	758	36.0	12.6	15.4	3344	176.9	58.2	14.2	
December	561	35.0	7.0	13.3	3905	211.9	65.2	14.1	
January (96)	691	25.0	22.1	14.6	4596	236.9	87.3	14.2	
February	1370	70.0	22.2	14.9	5966	306.9	109.5	14.3	
March	1024	69.0	9.3	13.1	6990	375.9	118.8	14.1	
April	760	42.0	7.0	15.5	7750	417.9	125.8	14.3	
May	1426	91.0	4.2	14.9	9176	508.9	130.0	14.4	
June	1011	53.0	18.2	14.2	10187	561.9	148.2	14.3	
July	738	57.1	13.1	10.5	10925	619.0	161.3	14.0	
August	1191	77.0	11.1	13.5	12116	696.0	172.4	14.0	
September	1089	76.0	2.8	13.8	13205	772.0	175.2	13.9	
October	930	64.1		14.5	14135	836.1	175.2	14.0	
November	1284	79.5	2.6	15.6	15419	915.6	177.8	14.1	
December	1100	73.2		15.0	16519	988.8	177.8	14.2	
January (97)	1021	72.2		13.2	17540	1066.0	177.8	14.1	
February	992	79.0		12.6	18532	1145.0	177.8	14.0	
March	848	68.0	4.0	11.8	19380	1213.0	181.8	13.9	
April	1116	89.7		12.5	20496	1302.7	181.8	13.8	
May	912	74.5	1.7	11.9	21408	1377.1	183.5	13.8	

GSA Tag No. 4272041										
Monthly						Cumulative				
Month		Miles	Gasoline	CNG	mpg		Miles	Gasoline	CNG	mpg
August (95)		279	13.7	5.9	14.2		279	13.7	5.9	14.2
September		346	19.4	5.6	13.8		625	33.1	11.5	14.0
October		855	52.2	12.3	12.3		1480	85.3	23.8	13.6
November		681	50.2		13.5		2161	135.5	23.8	13.6
December		381	13.0	8.6	17.6		2542	148.5	32.4	14.1
January (96)		658	46.8	7.8	12.1		3208	195.3	40.2	13.6
February		839	47.0	12.7	14.1		4039	242.3	52.9	13.7
March		685	34.0	10.2	15.5		4724	276.3	63.1	13.9
April		556	34.0		16.4		5280	310.3	63.1	14.1
May		527	49.0	7.9	9.3		5807	359.3	71.0	13.5
June		408	35.0		11.7		6215	394.3	71.0	13.4
July		488	24.0	12.1	13.5		6703	418.3	83.1	13.4
August		358	38.0		9.4		7061	456.3	83.1	13.2
September		673	64.0		10.5		7734	520.3	83.1	12.8
October		772	63.2	8.2	10.8		8506	583.5	91.3	12.6
November		612	38.0		16.7		9118	621.5	91.3	12.8
December		456	32.8		13.9		9574	654.3	91.3	12.9
January (97)		925	64.8	9.3	12.5		10499	719.1	100.6	12.9
February		456	34.2		13.3		10955	753.3	100.6	12.9
March		394	30.6		12.9		11349	783.9	100.6	12.9
April		428	36.0	6.9	10.0		11777	819.9	107.5	12.7
May		557	36.1	5.9	13.3		12334	856.0	113.4	12.7

GSA Tag No. 4272042										
Monthly						Cumulative				
Month		Miles	Gasoline	CNG	mpg		Miles	Gasoline	CNG	mpg
August (95)		408	19.9	9.4	13.9		408	19.9	9.4	13.9
September		524	40.3		13.0		932	60.2	9.4	13.4
October		799	61.8		13.1		1731	122.0	9.4	13.2
November		665	49.2		13.5		2396	171.2	9.4	13.3
December		513	31.2	8.6	16.4		2909	202.4	18.0	13.2
January (96)		919	69.7		13.2		3828	272.1	18.0	13.2
February		432	30.3		14.2		4260	302.4	18.0	13.3
March		738	51.4		14.4		4998	353.8	18.0	13.4
April		861	71.3		12.1		5859	425.1	18.0	13.2
May		801	56.8		14.1		6660	481.9	18.0	13.2
June		529	34.5		15.3		7189	516.4	18.0	13.4
July		631	53.3	3.3	11.1		7820	569.7	21.3	13.2
August		667	51.9		12.6		8487	621.6	21.3	13.2
September		551	39.5		13.9		9038	661.1	21.3	13.3
October		369	33.9		10.9		9407	695.0	21.3	13.2
November		248	20.5		12.1		9655	715.5	21.3	13.1
December		265	22.0		12.0		9920	737.5	21.3	13.1
January (97)		0	0		0		9920	737.5	21.3	13.1
February		314	26.0		12.1		10234	763.5	21.3	13.1
March		174	11.7		14.8		10408	775.2	21.3	13.1
April		180	17.1		10.5		10588	792.3	21.3	13.1
May		148	11.6		12.8		10736	803.9	21.3	13.0

GSA Tag No. 4272043										
Monthly						Cumulative				
Month		Miles	Gasoline	CNG	mpg		Miles	Gasoline	CNG	mpg
August (95)		579	23.0	21.5	13.0		579	23.0	21.5	13.0
September		523	33.5	7.9	12.6		1102	56.5	29.4	12.8
October		441		41.2	10.7		1543	56.5	70.6	12.1
November		375	6.8	27.4	13.9		1918	63.5	98.0	11.9
December		261	5.2	13.9	13.6		2179	68.7	111.9	12.1
January (96)		375	14.0	14.0	13.4		2554	82.7	125.9	12.2
February		620	12.3	37.4	12.5		3174	95.0	163.3	12.3
March		346	18.4	9.3	12.5		3520	113.4	172.0	12.3
April		472	25.3	8.8	13.8		3992	138.4	181.4	12.5
May		527	33.7	7.6	12.8		4519	172.1	189.0	12.5
June		495	28.9	8.2	13.3		5014	201.0	197.2	12.6
July		429	6.0	38.1	9.7		5443	207.0	235.3	12.3
August		849	51.0	8.5	14.3		6292	258.0	243.8	12.5
September		424	38.0		11.2		6716	296.0	243.8	12.4
October		367	27.3		13.4		7083	323.3	243.8	12.5
November		304	23.9		12.7		7387	347.2	243.8	12.5
December		380	27.8		13.7		7767	375.0	243.8	12.6
January (97)		375	28.3		13.2		8142	403.3	243.8	12.6
February		452	29.2	9.8	11.6		8594	432.5	253.6	12.5
March		363	21.8		16.6		8957	454.3	253.6	12.7
April		315	27.6		8.3		9272	481.9	253.6	12.6
May		495	37.6		13.2		10130	519.5	253.6	13.1

GSA Tag No. 42745										
Monthly						Cumulative				
Month		Miles	Gasoline	CNG	mpg		Miles	Gasoline	CNG	mpg
August (95)		100	8.0		12.5		100	8.0		12.5
September		329	23.0		14.3		429	31.0		13.8
October		243	19.3	7.4	9.1		672	50.3	7.4	11.6
November		214	12.0		17.8		886	62.3	7.4	12.6
December		445	35.0		12.7		1331	97.3	7.4	12.7
January (96)		278	21.7		12.8		1609	119.0	7.4	12.2
February		332	16.3	10.2	12.5		1941	135.3	17.6	12.7
March		192	15.6		12.3		2133	150.9	17.6	12.7
April		208	13.7		15.2		2341	164.6	17.6	12.8
May		320	25.2		12.7		2661	189.8	17.6	12.8
June		288	26.6		10.8		2949	216.4	17.6	12.6
July		217		23.8	9.1		3166	216.4	41.4	12.3
August		113	12.9		8.6		3279	229.3	41.4	12.1
September		103	12.0		8.6		3382	241.3	41.4	12.0
October		268	23.3		11.5		3650	264.6	41.4	11.9
November		392	35.2		11.1		4042	299.8	41.4	11.8
December		365	29.6		12.3		4407	329.4	41.4	11.9
January (97)		317	24.9		12.7		4724	354.3	41.4	11.9
February		229	22.5		10.0		4953	376.8	41.4	11.8
March		303	23.3		13.0		5256	400.1	41.4	11.9
April		268	21.9		12.2		5524	422.0	41.4	11.9
May		315	25.3		12.5		5839	447.3	41.4	11.9

GSA Tag No. 42746										
Monthly						Cumulative				
Month		Miles	Gasoline	CNG	mpg		Miles	Gasoline	CNG	mpg
August (95)		134	5.4	4.9	13.0		134	5.4	4.9	13.0
September		177	7.0	6.4	13.2		311	12.4	11.3	13.1
October		182	7.5	3.8	16.1		493	19.9	15.1	14.1
November		195	10.3	33	11.7		688	44.2	18.4	14.0
December		191	14.0		13.6		879	44.2	18.4	14.0
January (96)		300	12.0	10.3	13.4		1179	56.2	28.7	13.9
February		324	24.0	0	13.5		1503	80.2	28.7	13.8
March		231	3.0	9.3	18.4		1734	83.2	38.0	14.3
April		210	11.0	4.7	13.4		1944	94.2	42.7	14.2
May		403	27.0	5.8	12.2		2347	121.2	48.5	13.8
June		241	10.0	9.7	12.2		2588	131.2	58.2	13.7
July		340	34.2	3.0	9.1		2928	165.4	61.2	12.9
August		321	23.5		13.7		3249	188.9	61.2	13.0
September		198	12.0		14.8		3447	200.9	61.2	13.1
October		464	38.5		12.4		3911	239.4	61.2	13.0
November		308	24.8		12.4		4219	264.2	61.2	13.0
December		244	22.0		11.1		4463	286.2	61.2	12.8
January (97)		293	13.5		21.7		4756	299.7	61.2	13.2
February		152	11.6		13.1		4908	311.3	61.2	13.2
March		123	12.1		10.2		5031	323.4	61.2	13.1
April		292	24.9		11.7		5323	348.3	61.2	13.0
May		134	12.3		10.9		5457	360.6	61.2	12.9

GSA Tag No. 4272050										
Monthly						Cumulative				
Month		Miles	Gasoline	CNG	mpg		Miles	Gasoline	CNG	mpg
August (95)		864	24.0	38.8	13.8		864	24.0	38.8	13.8
September		574	44.4		12.9		1438	68.4	38.8	13.4
October		532	41.3		12.9		1970	109.7	38.8	13.3
November		501	14.2	2.8	13.9		2471	123.9	60.6	13.4
December		352	22.7		15.5		2823	146.6	60.6	13.6
January (96)		708	44.5	11.7	12.6		3531	191.1	72.3	13.4
February		722	46.1	11.7	12.5		4253	237.2	84.0	13.2
March		487	35.0		13.9		4740	272.2	84.0	13.3
April		523	41.2		12.7		5263	313.4	84.0	13.2
May		690	49.8		13.9		5953	363.2	84.0	13.3
June		445	38.9		11.4		6398	402.1	84.0	13.2
July		1023	77.5		13.2		7421	479.6	84.0	13.2
August		743	61.7		12.0		8164	541.3	84.0	13.1
September		605	48.8		12.3		8769	590.1	84.0	13.0
October		580	46.1		12.6		9349	636.2	84.0	13.0
November		503	33.9		14.8		9852	670.1	84.0	13.1
December		537	37.5		14.3		10389	707.6	84.0	13.1
January (97)		364	30.0		12.1		10753	737.6	84.0	13.1
February		722	61.9		11.7		11475	799.5	84.0	13.0
March		509	34.8	10.2	11.3		11984	834.3	94.2	12.9
April		282	18.0		15.6		12266	852.3	94.2	13.0
May		391	39.0	13.6	13.0		12950	891.3	107.8	13.0

GSA Tag No. 4272051										
Monthly						Cumulative				
Month	Miles	Gasoline	CNG	mpg		Miles	Gasoline	CNG	mpg	
August (95)	898	27.8	38.8	13.4		898	27.8	38.8	13.4	
September	1186	57.7	29.5	13.6		2084	85.5	68.3	13.6	
October	4008	279.6	38.5	12.6		6092	365.1	106.8	12.9	
November	1007	52.7	21.8	13.5		7099	417.8	128.6	13.0	
December	249	9.7	10.2	12.5		7346	427.5	138.8	13.0	
January (96)	1709	85.9	35.0	14.1		9055	513.4	173.8	13.2	
February	663	43.8	8.5	12.7		9718	557.2	182.3	13.1	
March	974	63.7	21.0	11.2		10692	620.9	203.3	13.0	
April	1111	41.8	41.1	13.4		11803	662.7	244.4	13.0	
May	1128	57.4	10.1	16.7		12931	720.1	254.5	13.3	
June	1224	65.5	10.0	16.2		14155	785.6	264.5	13.5	
July	693	48.1	15.0	14.4		14848	833.7	279.5	13.3	
August	1211	60.5	6.1	18.1		16059	894.2	285.6	13.6	
September	1608	82.3	26.5	14.8		17667	976.5	312.1	13.7	
October	1706	120.4	25.1	11.7		19373	1096.9	337.2	13.5	
November	1954	124.2	11.2	14.4		21327	1221.1	348.4	13.6	
December	1531	96.0	29.9	12.2		22858	1317.1	378.3	13.5	
January (97)	1729	107.1	13.5	14.7		24587	1421.2	391.8	13.6	
February	2262	1224.5	13.5	16.4		26849	1545.7	405.3	13.8	
March	2033	130.0	22.9	13.3		28882	1675.7	428.2	13.7	
April	1156	66.5	16.4	13.9		30038	1742.2	444.6	13.7	
May	2407	136.4	19.3	15.4		32445	1878.6	463.9	13.9	

GSA Tag No. 4272052										
Monthly						Cumulative				
Month	Miles	Gasoline	CNG	mpg		Miles	Gasoline	CNG	mpg	
August (95)	780	46.0	9.7	14.0		780	46.0	9.7	14.0	
September	1055	46.0	37.6	12.6		1855	92.0	47.3	13.2	
October	1474	52.3	60.2	13.1		3309	144.3	107.5	13.1	
November	928	36.7	44.0	11.5		4237	181.0	151.5	12.7	
December	1437	38.8	67.0	13.5		5674	219.8	218.5	12.9	
January (96)	1089	71.9	8.1	13.6		6763	291.7	226.1	13.1	
February	1560	119.0		13.1		8333	410.7	226.1	13.0	
March	1180	94.4		13.4		9513	505.1	226.1	13.0	
April	1290	96.3		13.4		10803	601.4	226.1	13.1	
May	798	66.2		12.1		11601	667.6	226.1	13.0	
June	996	74.8		13.3		12597	742.4	226.1	13.0	
July	1055	86.0		12.3		13652	828.4	226.1	12.9	
August	715	54.7		13.0		14367	883.1	226.1	13.0	
September	670	53.4		12.5		15037	936.5	226.1	12.9	
October	881	70.9		12.4		15918	1007.4	226.1	12.9	
November	838	60.7		13.8		16756	1068.1	226.1	12.9	
December	809	56.1		14.4		17565	1124.2	226.1	13.0	
January (97)	855	61.7		13.9		18420	1185.9	226.1	13.0	
February	776	64.3		12.1		19196	1250.2	226.1	13.0	
March	502	34.3		14.3		19698	1284.5	226.1	13.0	
April	952	66.8		14.2		20650	1351.3	226.1	13.1	
May	848	68.1		12.5		21498	1419.4	226.1	13.1	

GSA Tag No. 4272054									
Monthly					Cumulative				
Month	Miles	Gasoline	CNG	mpg	Miles	Gasoline	CNG	mpg	
August (95)	629	20.3	25.3	13.8	629	20.3	25.3	13.8	
September	521	25.5	8.3	15.4	1150	45.8	33.6	14.5	
October	620	36.9	11.2	12.9	1770	82.7	44.8	13.9	
November	491	34.3		14.3	2261	117.0	44.8	14.0	
December	343	16.1	16.8	15.0	2604	133.1	51.6	14.1	
January (96)	229	9.8	10.6	11.2	2833	142.9	62.2	13.8	
February	401	31.1		12.9	3234	174.0	62.2	13.7	
March	307	21.5		14.3	3541	195.5	62.2	13.7	
April	296	18.3	8.6	11.0	3837	213.8	70.8	13.5	
May	744	55.9		13.4	4581	269.7	70.8	13.5	
June	794	59.0		13.5	5375	328.7	70.8	13.5	
July	133	16.9		7.9	5508	345.6	70.8	13.2	
August	461	32.7		14.1	5969	378.3	70.8	13.3	
September	696	43.0		16.2	6605	421.3	70.8	13.5	
October	173	20.9		8.7	6838	442.2	70.8	13.3	
November	749	61.6		12.2	7587	503.8	70.8	13.2	
December	323	28.3		11.4	7910	532.1	70.8	13.1	
January (97)	643	42.1		15.3	8553	574.2	70.8	13.3	
February	912	54.7		16.6	9465	628.9	70.8	13.5	
March	828	62.2		13.3	10293	691.1	70.8	13.5	
April	417	27.8		15.0	10710	718.9	70.8	13.6	
May	620	41.3		15.0	11330	760.2	70.8	13.6	

GSA Tag No. 4272055									
Monthly					Cumulative				
Month	Miles	Gasoline	CNG	mpg	Miles	Gasoline	CNG	mpg	
August (95)	411	26.0	6.9	12.5	411	26.0	6.9	12.5	
September	266	20.5		13.0	677	46.5	6.9	12.7	
October	286	20.8		13.7	963	67.3	6.9	13.0	
November	301	21.5		14.0	1264	88.8	6.9	13.2	
December					1264	88.8	6.9	13.2	
January (96)	1180	85.5		13.8	2444	174.3	6.9	13.5	
February	300	22.9		13.1	2744	197.2	6.9	13.4	
March	275	19.9		13.8	3019	217.1	6.9	13.5	
April	896	48.0	23.7	12.5	3915	265.1	30.6	13.2	
May	593	43.9		13.5	4508	309.0	30.6	13.3	
June	565	41.2		13.7	5073	350.2	30.6	13.3	
July	194	2.3	13.5	12.3	5267	325.5	44.1	13.3	
August					5267	325.5	44.0	13.3	
September	352	30.3		11.6	5619	382.8	44.1	13.2	
October	157	10.5		15.0	5776	393.3	44.1	13.2	
November	191	15.0		12.7	5967	408.3	44.1	13.2	
December	189	15.9		11.9	6156	424.2	44.1	13.1	
January (97)	165	8.1		20.4	6321	432.3	44.1	13.3	
February	176	10.0		17.6	6497	442.3	44.1	13.4	
March	150	13.6		11.0	6647	455.9	44.1	13.3	
April	331	30.3		11.0	6978	486.2	44.1	13.2	
May	181	14.6		12.4	7159	500.8	44.1	13.1	



GSA Tag No. 4272056										
Month	Monthly					Cumulative				
	Miles	Gasoline	CNG	mpg		Miles	Gasoline	CNG	mpg	
August (95)	540	7.7	31.7	13.7		540	7.7	31.7	13.7	
September	592	26.5	9.4	16.4		1132	34.2	41.1	15.0	
October	422	18.4	9.0	15.4		1554	52.6	50.1	15.1	
November	247	8.5	11.6	12.3		1801	61.1	61.7	14.7	
December	256	15.0		17.1		2057	76.1	61.7	14.9	
January (96)	333	8.6	16.1	13.5		2390	84.7	77.8	14.7	
February	351	15.2	10.2	13.8		2741	99.9	88.0	14.6	
March	286	12.0	10.4	12.8		3027	98.4	98.4	14.4	
April	328	19.7		16.6		3355	131.6	98.4	14.6	
May	297	5.2	10.2	19.2		3652	136.8	108.6	14.9	
June	218	4.0	8.0	18.1		3870	140.8	116.6	15.0	
July	323	20.7	5.1	12.5		4193	161.5	121.7	14.8	
August	133	3.0	9.3	10.8		4326	164.5	131.0	14.6	
September	182	9.0		20.2		4508	173.5	131.0	15.2	
October	497	24.0		20.7		5005	197.5	131.0	15.2	
November	286	28.0		10.2		5291	225.5	131.0	14.8	
December	466	29.3		15.9		5757	254.8	131.0	14.9	
January (97)	452	36.5		12.4		6209	291.3	131.0	14.7	
February	510	37.3		13.7		6719	328.6	131.0	14.6	
March	425	21.6		19.7		7144	350.2	131.0	14.8	
April	398	52.5		13.7		7542	381.8	131.0	14.7	
May	584	42.5		13.7		8126	424.3	131.0	14.6	

GSA Tag No. 4272057										
Month	Monthly					Cumulative				
	Miles	Gasoline	CNG	mpg		Miles	Gasoline	CNG	mpg	
August (95)	206	8.9	6.4	13.5		206	8.9	6.4	13.5	
September	505	33.0	5.5	13.1		711	41.9	11.9	13.2	
October	218	17.0		12.8		929	58.9	11.9	13.1	
November	226	14.3		15.8		1155	73.2	11.9	13.6	
December	384	25.7		14.9		1539	98.9	11.9	13.9	
January (96)	250	5.2	14.4	12.8		1789	104.1	26.3	13.7	
February	244	10.0	8.4	13.3		2033	114.1	34.7	13.7	
March	354	23.8		14.9		2387	137.7	34.7	13.8	
April	332	29.7		11.2		2719	167.4	34.7	13.5	
May	366	22.0		16.6		3085	189.4	34.7	13.8	
June	310	21.0		13.9		3395	210.4	34.7	13.9	
July	756	54.4		13.9		4151	264.8	34.7	13.9	
August	316	25.6		12.3		4467	290.4	34.7	13.7	
September						4467	290.4	34.7	13.7	
October	615	42.7		14.4		5082	333.1	34.7	13.8	
November	559	47.1		11.9		5641	380.2	34.7	13.6	
December	397	27.2		14.6		6038	407.4	34.7	13.7	
January (97)	287	21.6		13.3		6325	429.0	34.7	13.6	
February	194	12.9		15.1		6519	441.9	34.7	13.7	
March	354	23.3		15.2		6873	465.2	34.7	13.7	
April	363	23.7		15.3		7236	488.9	34.7	13.8	
May	492	32.0		15.4		7728	520.9	34.7	13.9	



GSA Tag No. 4272059										
Monthly						Cumulative				
Month		Miles	Gasoline	CNG	mpg		Miles	Gasoline	CNG	mpg
August (95)		580	7.6	35.0	13.6		580	7.6	35.0	13.6
September		354	9.4	15.9	13.9		934	17.0	50.9	13.8
October		424		36.9	11.7		1358	17.0	87.8	13.0
November		671	11.7	48.7	13.8		2029	28.7	136.5	12.3
December		344	3.6	17.2	16.5		2373	32.3	153.7	12.8
January (96)		684	11.5	44.3	12.3		3057	43.8	198.0	12.8
February		320	5.1	16.2	15.0		3377	48.8	214.2	12.8
March		611	11.2	31.0	14.4		3998	60.1	245.2	13.1
April		780	9.5	45.7	14.1		4768	69.6	290.9	13.2
May		835	24.3	44.6	12.1		5603	93.9	335.5	13.0
June		601	5.5	42.7	12.5		6204	99.4	378.2	13.0
July		540	25.0	31.7	9.5		6744	124.4	409.9	12.6
August		658		44.8	14.7		7402	124.4	454.7	12.8
September		641	18.7	24.6	14.8		8043	143.1	479.3	12.9
October		812	37.3	14.4	15.7		8855	180.4	493.7	13.1
November		768	37.3	8.0	16.9		9623	217.7	501.7	13.4
December		802	41.2	14.4	14.4		10425	258.9	516.1	13.5
January (97)		868	51.4	13.2	13.4		11293	310.3	529.3	13.5
February		1164	60.7	37.9	11.8		12457	372.1	567.2	13.3
March		1146	61.8	46.3	10.6		13603	433.9	613.5	13.0
April		1236	67.2	37.9	11.8		14839	501.1	651.4	12.9
May		1136	69.6	41.2	10.3		15975	570.7	692.6	12.7

GSA Tag No. 4272060										
Monthly						Cumulative				
Month		Miles	Gasoline	CNG	mpg		Miles	Gasoline	CNG	mpg
August (95)		403	28.0		14.3		403	28.0		14.3
September		330	23.1		14.3		733	51.1		14.3
October		185	12.8		14.4		918	63.9		14.4
November		130	8.9		14.6		1048	72.8		14.4
December		90		8.0	11.3		1138	72.8	8.0	14.0
January (96)		212	13.0		16.3		1350	85.8	9.0	14.4
February		62	4.0		15.5		1412	89.8	8.0	14.4
March		155	11.5		13.5		1567	101.3	8.0	14.3
April		248	16.8		16.8		1815	118.1	8.0	14.4
May		387	27.6		14.0		2202	145.7	8.0	14.3
June		226	22.5		14.6		2428	168.2	8.0	13.8
July		441	28.3	8.0	12.1		2869	196.5	16.0	13.5
August		323	14.5	13.1	11.7		3192	211.0	29.1	13.3
September		179	14.8		12.1		3371	225.8	29.1	13.2
October		196	13.9		14.1		3567	239.7	29.1	13.3
November		389	28.3		13.7		3956	268.0	29.1	13.3
December		126	11.3		11.2		4082	279.3	29.1	13.2
January (97)		191	13.2		14.5		4273	292.5	29.1	13.3
February		145	9.3		15.6		4418	301.8	29.1	13.4
March		400	27.1		14.7		4818	328.9	29.1	13.5
April		311	25.2		12.3		5129	354.1	29.1	13.4
May		346	27.0		12.8		5475	381.1	29.1	13.4

GSA Tag No. 4272062									
Month	Monthly				Cumulative				
	Miles	Gasoline	CNG	mpg	Miles	Gasoline	CNG	mpg	
August (95)	718	27.1	25.3	13.7	718	27.1	25.3	13.7	
September	640	36.6	14.2	12.6	1358	63.7	39.5	13.2	
October	607	42.7		14.2	1965	106.4	39.5	13.5	
November	656	41.2	6.3	14.1	2621	147.6	45.8	13.6	
December	344	10.3	15.2	13.5	2965	157.9	61.0	13.5	
January (96)	639	31.4	12.4	14.6	3604	189.3	73.4	13.7	
February	585	47.9		12.2	4185	237.2	73.4	13.5	
March	611	29.0	15.0	13.9	4796	266.2	88.4	13.5	
April	780	59.5	8.6	13.2	5576	325.7	97.0	13.3	
May	591	41.8		14.1	6167	367.5	97.0	13.3	
June	710	47.2	6.8	13.1	6877	414.7	103.8	13.3	
July	1184	75.9	6.4	14.4	8061	490.6	110.2	13.5	
August	792	47.4	7.1	14.5	8853	538.0	117.3	13.5	
September	746	51.4		14.5	9599	589.4	117.3	13.6	
October	633	46.1		13.7	10232	635.5	117.3	13.6	
November	451	32.7		13.8	10638	668.2	117.3	13.6	
December	200	19.6		10.2	10838	687.8	117.3	13.5	
January (97)	500	26.7		18.7	11338	714.5	117.3	13.6	
February	277	24.7		11.2	11615	739.2	117.3	13.6	
March	475	35.3		13.4	12090	774.5	117.3	13.6	
April	867	67.0		12.9	12957	841.5	117.3	13.5	
May	394	38.2		10.6	13351	879.7	117.3	13.4	

GSA Tag No. 4272064									
Month	Monthly				Cumulative				
	Miles	Gasoline	CNG	mpg	Miles	Gasoline	CNG	mpg	
August (95)	595	44.1		13.5	595	44.1		13.5	
September	693	39.3	10.6	13.9	1288	83.4	10.6	13.7	
October	396	28.5	3.7	12.3	1684	111.9	23.8	13.3	
November	364	22.8	9.5	11.3	2048	134.7	23.8	12.9	
December	384	14.5	10.8	15.2	2432	149.2	34.6	13.2	
January (96)	470	34.8		13.5	2902	184.0	34.6	13.3	
February	260	20.2		12.8	3162	204.2	34.6	13.2	
March	308	11.3	10.2	14.3	3470	215.5	44.8	13.3	
April	850	30.6	26.7	14.8	4320	246.1	71.5	13.6	
May	655	59.6		11.0	4975	305.7	71.5	13.2	
June	654	36.4		18.0	5629	342.1	71.5	13.6	
July	749	56.2		13.3	6378	398.3	71.5	13.6	
August	272	10.3	14.4	11.0	6650	408.6	85.9	13.4	
September	708	39.2	6.7	15.4	7358	447.8	92.6	13.6	
October	635	35.6	21.6	11.1	7993	483.4	114.2	13.4	
November	859	49.3		17.4	8852	532.7	114.2	13.6	
December	415	31.7		13.1	9267	564.4	114.2	13.7	
January (97)	370	22.8		16.2	9637	587.2	114.2	13.7	
February	250	19.1		13.1	9887	606.3	114.2	13.7	
March	412	31.7		13.0	10299	638.0	114.2	13.7	
April	351	24.5		14.3	10650	676.5	114.2	13.7	
May	240	13.5		17.8	10890	676.0	114.2	13.8	

GSA Tag No. 4270086									
Monthly					Cumulative				
Month	Miles	Gasoline	CNG	mpg	Miles	Gasoline	CNG	mpg	
August (95)	572	41.8		13.7	572	41.8		13.7	
September	487	28.6	10.4	12.5	1059	70.4	10.4	13.1	
October	427	30.1		14.2	1486	100.5	10.4	13.4	
November	737	57.1		12.9	2223	157.6	10.4	13.2	
December	346	31.5		11.0	2569	189.1	10.4	12.9	
January (96)	372	19.1	11.9	11.1	2941	208.2	22.3	12.8	
February	440	22.5	8.5	14.2	3381	230.7	30.8	12.9	
March	502	40.1		12.5	3883	270.8	30.8	12.9	
April	597	44.6		13.4	4480	315.4	30.8	12.9	
May	337	25.8		13.1	4817	341.2	30.8	12.9	
June	654	40.3		16.2	5471	381.5	30.8	13.3	
July	717	42.3	8.8	14.0	6188	423.8	39.6	13.4	
August	473	29.2		16.2	6661	453.0	39.6	13.5	
September	214	14.3		14.9	6875	467.3	39.6	13.6	
October	190	13.8		13.8	7065	481.1	39.6	13.6	
November	124	8.6		14.4	7189	489.7	39.6	13.6	
December	142	12.2		11.6	7331	501.9	39.6	13.5	
January (97)	310	24.3		12.8	7641	526.2	39.6	13.5	
February	184	14.9		12.3	7825	541.0	39.6	13.5	
March	160	12.4		12.9	7985	553.5	39.6	13.5	
April	455	28.7		14.9	8440	582.2	39.6	13.6	
May	358	24.1		14.9	8798	606.3	39.6	13.6	

GSA Tag No. 4270087									
Monthly					Cumulative				
Month	Miles	Gasoline	CNG	mpg	Miles	Gasoline	CNG	mpg	
August (95)	505	26.1	10.2	13.9	505	26.1	10.2	13.9	
September	607	35.4	9.9	13.4	1112	61.5	20.1	13.6	
October	528	21.3	20.2	12.8	1640	82.8	40.3	13.3	
November	417	26.9	7.4	12.2	2057	109.7	47.7	13.1	
December	258	7.6	9.7	14.9	2315	117.3	57.4	13.3	
January (96)	801	55.7	4.2	13.4	3116	173.0	61.6	13.3	
February	821	57.7		14.2	3937	230.7	61.6	13.5	
March	318	8.0	17.5	12.5	4255	238.7	79.1	13.4	
April	781	43.9	17.0	12.8	5036	282.6	96.1	13.3	
May	624	57.2		10.8	5660	339.8	96.1	13.0	
June	632	38.1		16.5	6292	377.9	96.1	13.3	
July	1423	84.5	23.2	12.2	7715	462.4	119.3	13.3	
August	1014	51.4	7.9	17.1	8729	513.8	127.2	13.6	
September	411	22.5	11.0	12.3	9140	536.3	138.2	13.6	
October	478	31.5		15.2	9618	567.8	138.2	13.6	
November	954	60.1		15.9	10572	627.9	138.2	13.8	
December	131	7.3		17.9	10703	635.2	138.2	13.8	
January (97)	468	24.4		19.1	11171	659.6	138.2	14.0	
February	264	21.5		12.3	11435	681.1	138.2	14.0	
March	299	24.6		12.2	11734	705.7	138.2	13.9	
April	324	23.1		14.3	12058	728.8	138.2	13.9	
May					12058	728.8	138.2	13.9	

GSA Tag No. 4270090										
Monthly					Cumulative					
Month		Miles	Gasoline	CNG	mpg		Miles	Gasoline	CNG	mpg
August (95)		573	7.5	37.2	12.8		573	7.5	37.2	12.8
September		672	20.2	29.5	13.5		1245	27.7	66.7	13.2
October		923	28.9	37.5	13.9		2168	56.6	104.2	13.5
November		998	19.7	62.1	12.2		3166	76.3	166.3	13.1
December		956	14.0	60.1	11.8		4122	90.3	226.4	13.0
January (96)		1414		101.6	12.2		5536	90.3	328.0	13.2
February		730		46.5	15.7		6266	90.3	374.5	13.5
March		968	18.4	55.0	11.4		7234	108.7	481.0	13.3
April		607		51.5	13.3		7841	108.7	481.0	13.3
May		744	41.5	14.3	13.3		8585	150.2	495.3	13.3
June		789	26.3	23.1	16.0		9374	176.5	518.4	13.5
July		800	45.0	4.1	16.3		10174	221.5	522.5	13.7
August		853	40.1	17.2	14.9		11027	261.6	539.7	13.8
September		758	50.1	7.5	13.1		11785	312.0	547.2	13.7
October		841	51.3	13.0	13.0		12626	363.3	560.2	13.7
November		734	39.9	8.8	15.1		13360	403.2	569.0	13.7
December		432	13.5	19.8	13.0		13792	416.7	588.8	13.7
January (97)		1071	51.3	13.8	16.5		14863	468.0	602.6	13.9
February		743	25.0	28.8	13.8		15606	493.0	631.4	13.9
March		861	35.3	39.9	11.4		16467	528.3	671.3	13.7
April		1133	38.7	47.1	13.2		17600	567.0	718.4	13.7
May		1236	63.4	24.6	14.0		18836	630.4	743.0	13.7

**APPENDIX B**  
**3-BAG GASOLINE/CNG FTP EMISSIONS AND HFET TEST RESULTS**  
**ON VEHICLE NOS. 72031, 72038, 72051**  
**4,000- 10,000- AND 20,000-MILE INTERVALS**



VEHICLE #	FUEL	MILES	G24-72038				G24-72061				G24-72031				G24-72031			
			GASOLINE		CNG		GASOLINE		CNG		GASOLINE		CNG		GASOLINE		CNG	
			4,000	10,000	20,000	4,000	10,000	20,000	4,000	10,000	20,000	4,000	10,000	20,000	4,000	10,000	20,000	
THC	Bag 1 (g)	4.01	3.90	3.66	8.41	7.85	8.51	3.91	4.47	4.77	7.57	7.79	8.18	4.72	3.79	8.48	8.33	
	Bag 2 (g)	0.47	1.19	0.62	11.81	10.50	10.33	0.58	1.02	0.98	11.21	10.97	10.42	0.85	0.58	11.83	12.00	
	Bag 3 (g)	1.72	1.87	1.31	7.78	7.78	6.87	1.44	2.02	2.03	9.32	8.01	8.53	1.53	1.44	9.01	9.23	
	FTP (g/mi)	0.43	0.53	0.39	2.70	2.48	2.38	0.42	0.56	0.56	2.66	2.97	2.49	0.70	0.50	2.78	2.83	
	HFET (g/mi)	0.06	0.16	0.04	1.21	1.28	1.05	0.06	0.13	0.06	1.10	1.28	1.23	0.08	0.12	1.28	1.01	
NMNOG	Bag 1 (g)	1.049	1.110	0.844	0.161	0.156	0.134	1.059	1.202	1.202	0.146	0.124	0.148	1.225	0.964	0.148	0.142	
	Bag 2 (g)	0.047	0.178	0.072	0.178	0.178	0.130	0.087	0.147	0.114	0.116	0.136	0.104	0.076	0.042	0.136	0.12	
	Bag 3 (g)	0.387	0.475	0.316	0.034	0.128	0.111	0.310	0.636	0.466	0.037	0.123	0.148	0.346	0.310	0.028	0.120	
	FTP (g/mi)	0.36	0.46	0.316	0.12	0.16	0.125	0.33	0.57	0.436	0.10	0.13	0.137	0.54	0.39	0.308	0.11	
	Bag 1 (g)	3.40	3.34	3.19	0.04	0.14	0.28	3.40	3.93	4.14	0.28	0.07	0.04	4.60	4.10	3.26	0.58	
NMHGC	Bag 2 (g)	0.02	0.56	0.17	0.00	0.00	0.18	0.09	0.47	0.41	0.40	0.00	0.00	0.20	0.10	0.44	0.00	
	Bag 3 (g)	1.32	1.43	0.98	0.00	0.00	0.18	1.05	1.62	1.62	0.40	0.03	0.10	1.09	1.06	0.41	0.00	
	FTP (g/mi)	0.30	0.38	0.28	<0.01	0.01	0.06	0.29	0.41	0.42	0.06	0.01	0.42	0.35	0.28	0.13	<0.01	
	HFET (g/mi)	0.02	0.12	0.01	0.08	0.01	0.01	0.63	0.09	0.02	0.80	7.34	6.96	0.71	0.66	0.49	<0.01	
	Bag 1 (g)	0.56	0.51	0.46	7.77	6.98	7.39	7.39	0.47	0.60	0.57	8.80	9.36	0.63	0.59	0.43	10.32	10.66
CH4	Bag 2 (g)	0.42	0.66	0.46	10.98	9.50	9.12	0.46	0.50	0.51	10.42	9.93	7.22	0.89	0.40	7.93	8.36	
	Bag 3 (g)	0.38	0.39	0.32	7.62	7.05	6.50	0.36	0.36	0.37	8.29	7.22	2.23	0.18	0.14	2.42	2.56	
	FTP (g/mi)	0.12	0.13	0.11	2.51	2.21	2.14	0.12	0.12	0.13	2.43	2.32	0.18	0.14	0.11	2.42	2.42	
	HFET (g/mi)	0.04	0.04	0.03	1.05	1.13	1.04	0.03	0.04	0.04	1.02	1.18	1.23	0.06	0.04	1.02	1.16	
	Bag 1 (g)	49.77	41.50	36.84	8.78	9.50	10.55	47.85	46.17	50.96	8.29	9.09	10.23	75.19	80.33	38.79	8.18	7.95
CO	Bag 2 (g)	2.77	3.06	1.86	0.32	1.37	0.60	2.78	3.44	2.04	0.05	0.95	3.12	1.84	2.30	0.10	0.53	0.59
	Bag 3 (g)	16.63	14.44	8.01	9.76	13.29	13.54	11.14	14.66	17.79	11.42	10.31	20.30	43.22	9.37	6.64	7.36	8.22
	FTP (g/mi)	4.44	3.91	2.92	1.30	1.74	1.71	3.98	4.26	4.57	1.19	1.45	2.56	7.80	3.86	3.29	0.88	1.10
	HFET (g/mi)	0.31	0.01	0.02	0.02	0.01	0.03	0.01	0.05	0.10	0.03	0.02	0.02	0.07	0.04	0.06	<0.01	0.03
	Bag 1 (g)	3.34	4.28	4.18	3.56	3.91	4.47	3.32	4.47	6.01	3.82	3.97	6.76	3.68	3.43	3.94	3.63	4.40
NOX	Bag 2 (g)	1.87	2.32	1.96	2.12	2.36	2.02	1.47	2.05	2.42	1.95	2.14	2.89	1.98	1.78	2.46	2.04	4.28
	Bag 3 (g)	2.26	2.89	3.26	2.37	3.10	2.97	2.73	2.92	4.24	3.13	3.03	3.48	3.21	2.63	3.01	3.23	2.04
	FTP (g/mi)	0.69	0.76	0.76	0.67	0.78	0.76	0.60	0.75	1.00	0.72	0.78	1.02	0.79	0.66	0.78	0.81	0.77
	HFET (g/mi)	0.98	0.84	0.98	0.61	0.78	0.69	0.98	0.92	1.16	0.80	0.70	0.87	1.11	0.77	0.60	0.68	0.62
	Bag 1	14.34	14.84	14.40	14.62	14.80	14.19	13.98	14.58	13.84	14.37	14.96	13.29	14.80	14.30	13.78	14.81	14.14
FE (mpg)	Bag 2	14.64	16.36	16.10	14.01	15.05	14.38	14.12	15.15	14.36	13.73	15.03	14.15	15.32	14.76	13.43	14.65	14.19
	Bag 3	17.02	17.42	17.40	16.90	16.90	16.64	16.32	17.23	16.41	16.93	16.20	16.20	17.21	17.28	16.58	16.65	16.06
	FTP	16.16	16.70	16.91	14.83	16.46	14.69	14.84	16.84	14.68	14.41	16.82	14.82	16.63	15.27	16.12	14.65	14.65
	HFET	23.16	24.27	28.03	23.57	24.32	23.32	22.96	24.34	22.74	22.87	24.36	22.52	24.19	24.76	22.68	22.77	22.77

**APPENDIX C**  
**3-BAG CNG/GASOLINE TOTAL SPECIES AND**  
**COMPOSITE FTP TEST RESULTS**  
**ON VEHICLE NO. 72031**  
**AT 4,000- 10,000- AND 20,000-MILE INTERVALS**





TEST NUMBER: G72031FTP4K  
 TEST CAR: 1996 FORD F-150 PICKUP #31  
 TEST DATE: 2/28/98  
 TEST FUEL: CNG

COMPOUND	BAG 1	BAG 1	BAG 1	BAG 2	BAG 2	BAG 2	BAG 3	BAG 3	BAG 3	FTP	FTP	FTP
	MG/MI	WEIGHT NMOG %	OZONE, MG/MI	MG/MI	WEIGHT NMOG %	OZONE MG/MI	MG/MI	WEIGHT NMOG %	OZONE MG/MI		WEIGHT NMOG %	OZONE MG/MI
METHANE	2034.7		30.1	2674.4		39.6	2219.7		32.9	2417.4		35.78
ETHANE	96.0	65.65	24.0	117.4	86.49	29.4	0.0	0.00	0.0	80.8	74.51	20.20
ETHYLENE	10.6	7.28	77.8	0.1	0.05	0.5	2.5	8.91	18.3	2.9	2.70	21.31
PROPANE	11.0	7.51	5.3	9.0	6.62	4.3	12.4	44.01	6.0	10.3	9.54	4.96
PROPYLENE	1.4	0.98	13.5	0.0	0.00	0.0	0.4	1.44	3.8	0.4	0.38	3.84
ACETYLENE	0.0	0.01	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
PROPADIENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
BUTANE	2.3	1.56	2.3	1.6	1.15	1.6	2.4	8.64	2.5	2.0	1.80	1.99
TRANS-2-BUTENE	0.1	0.09	1.4	0.0	0.00	0.0	0.2	0.60	1.7	0.1	0.07	0.74
1-BUTENE	0.3	0.19	2.5	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.05	0.51
2-METHYLPROPENE (ISOBUTYLENE)	0.4	0.24	1.9	0.0	0.00	0.0	0.2	0.73	1.1	0.1	0.12	0.89
2,2-DIMETHYLPROPANE (NEOPENTANE)	0.1	0.08	0.0	0.0	0.00	0.0	0.1	0.49	0.1	0.1	0.06	0.02
PROPYLE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-BUTADIENE	0.2	0.13	2.1	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.04	0.43
2-METHYLPROPANE (ISOBUTANE)	1.5	1.00	1.8	1.0	0.75	1.2	2.2	7.95	2.7	1.4	1.33	1.75
1-BUTYNE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
METHANOL	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHANOL	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLBUTANE (ISOPENTANE)	4.5	3.08	6.2	0.9	0.67	1.2	3.1	11.05	4.3	2.3	2.08	3.11
2-BUTYNE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.08	0.0	0.0	0.00	0.00
PENTANE	0.9	0.59	0.9	0.3	0.25	0.4	0.6	2.05	0.8	0.5	0.47	0.53
UNIDENTIFIED C5 OLEFINS	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-1,3-BUTADIENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,3-DIMETHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-2-BUTENE	0.2	0.13	1.2	0.4	0.26	2.3	0.2	0.83	1.5	0.3	0.27	1.86
CYCLOPENTADIENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLBUTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CYCLOPENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-METHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYLBUTANE	0.3	0.17	0.3	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.05	0.06
MTBE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-METHYL-CIS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLPENTANE	0.2	0.13	0.3	0.0	0.00	0.0	0.0	0.10	0.0	0.0	0.04	0.07
4-METHYL-TRANS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYLPENTANE	0.1	0.04	0.1	0.0	0.00	0.0	0.0	0.05	0.0	0.0	0.02	0.02
2-METHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEXANE	0.2	0.15	0.2	0.0	0.00	0.0	0.0	0.17	0.0	0.1	0.05	0.06
UNIDENTIFIED C6 OLEFINS	0.2	0.13	1.2	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.04	0.26
TRANS-3-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-3-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-TRANS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYLCYCLOPENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETBE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-CIS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
METHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3,3-TRIMETHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,3-TRIMETHYLBUTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,4-DIMETHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYLCYCLOPENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
BENZENE	0.3	0.20	0.1	0.0	0.00	0.0	0.1	0.39	0.0	0.1	0.08	0.04
3-METHYL-1-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,3-DIMETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CYCLOHEXANE	0.2	0.14	0.3	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.04	0.05
2-METHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYLPENTANE	0.1	0.05	0.1	0.0	0.01	0.0	0.0	0.11	0.0	0.0	0.03	0.04
1,1-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CYCLOHEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00

3-METHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1,3-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-ETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,2-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,3-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,4-TRIMETHYLPENTANE	2.6	1.77	2.4	0.0	0.00	0.0	0.3	1.17	0.3	0.6	0.58	0.58
2-METHYL-1-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-3-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-3-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNIDENTIFIED C7	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-2-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-TRANS-3-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-ETHYL-CIS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4,4-TRIMETHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,4-TRIMETHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYL-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
METHYLCYCLOHEXANE	0.2	0.13	0.4	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.04	0.07
CIS-1,2-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,1,3-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4,4-TRIMETHYL-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,3-TRIMETHYLPENTANE	0.3	0.20	0.4	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.06	0.07
2,5-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLHEXANE	0.4	0.26	0.6	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.07	0.12
1-TRANS-2-CIS-4-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,3-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-TRANS-2-CIS-3-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3,4-TRIMETHYLPENTANE	0.5	0.31	0.7	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.09	0.15
2,3,3-TRIMETHYLPENTANE	0.5	0.34	0.6	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.09	0.12
TOLUENE	3.1	2.09	8.3	0.0	0.01	0.0	0.3	1.05	0.8	0.7	0.66	1.96
2,3-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,1,2-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,4-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,4,4-TETRAMETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-AND-TRANS-3,4-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-METHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-3-ETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-3-ETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-CIS,2-TRANS,3-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1,3-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,4-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-ETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,5-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1-METHYL-3-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1-METHYL-3-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,1-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1-METHYL-2-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-1-ETHYL-CYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4,4-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,4-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,2-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-OCTENE	0.2	0.13	0.5	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.04	0.10
TRANS-4-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
OCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNIDENTIFIED C8	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,3-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1,4-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ISOPROPYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3,5-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1-METHYL-2-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-2-ETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLHEPTANE	0.5	0.34	0.7	3.0	2.23	4.1	1.7	5.90	2.2	2.1	1.96	2.85
4,4-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1,2-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
PROPYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
PROPYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-4-ETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,6-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,1,3-TRIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,5-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,3-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00

3,5-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3,4-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
m- & p-XYLENE	0.3	0.18	1.9	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.05	0.40
4-METHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,4-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-ETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
STYRENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
o-XYLENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-3-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-3-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
NONANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ISOPROPYLBENZENE (CUMENE)	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
n-PROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-3-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-4-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3,5-TRIMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-2-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,4-TRIMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TERT-BUTYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-DECENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
DECANE	0.2	0.17	0.1	0.6	0.41	0.3	0.3	1.24	0.2	0.4	0.40	0.20
ISOBUTYLBENZENE	0.2	0.16	0.4	0.5	0.39	1.0	0.3	1.17	0.6	0.4	0.38	0.77
METHYLPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
BUTYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-DIMETHYL-5-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
S-BUTYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-3-ISOPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,3-TRIMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-4-ISOPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
INDAN	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-2-ISOPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-DIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,4-DIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-3-N-PROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-4-N-PROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2-DIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-2-N-PROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,4-DIMETHYL-2-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-DIMETHYL-4-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2-DIMETHYL-4-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-DIMETHYL-2-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNDECANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2-DIMETHYL-3-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,4,5-TETRAMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLBUTYLBENZENE (sec AMYLBENZENE)	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,4-DIMETHYLCUMENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,3,5-TETRAMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TERT-1-BUT-2-METHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,3,4-TETRAMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
N-PENT-BENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TERT-1-BUT-3,5-DIMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TERT-1-BUTYL-4-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
NAPHTHALENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
DODECANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3,5-TRIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,4-TRIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEXYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNIDENTIFIED C9-C12+	0.2	0.15	0.9	0.6	0.41	2.1	0.2	0.76	0.8	0.4	0.36	1.50
FORMALDEHYDE	5.3	3.62	37.8	0.0	0.00	0.0	0.1	0.50	1.0	1.1	1.04	8.09
ACETALDEHYDE	0.4	0.29	2.3	0.1	0.04	0.3	0.0	0.10	0.2	0.1	0.11	0.67
ACROLEIN	0.2	0.11	1.1	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.03	0.24
ACETONE	0.3	0.23	0.2	0.1	0.06	0.0	0.1	0.20	0.0	0.1	0.12	0.07
PROPIONALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CROTONALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ISOBUTYRALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.20	0.3	0.0	0.01	0.08
METHYL ETHYL KETONE	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.20	0.1	0.0	0.01	0.02
BENZALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEXANALDEHYDE	0.0	0.00	0.0	0.3	0.21	1.1	0.0	0.00	0.0	0.1	0.14	0.56

TEST NUMBER: G72031FTPCNG10K  
 TEST CAR: FORD F150 PICKUP #31  
 TEST DATE: 8/29/96  
 TEST FUEL: CNG

COMPOUND	BAG 1	BAG 1	BAG 1	BAG 2	BAG 2	BAG 2	BAG 3	BAG 3	BAG 3	FTP	FTP	FTP
	MG/MI	WEIGHT NMLOG %	OZONE, MG/MI	MG/MI	WEIGHT NMLOG %	OZONE MG/MI	MG/MI	WEIGHT NMLOG %	OZONE MG/MI	MG/MI	WEIGHT NMLOG %	OZONE MG/MI
METHANE	2223.2		32.9	2816.9		41.7	2326.5		34.4	2559.1		37.88
ETHANE	91.4	64.12	22.8	113.2	83.50	28.3	94.3	78.40	23.6	103.5	77.93	25.88
ETHYLENE	10.4	7.32	76.0	0.1	0.05	0.5	2.8	2.36	20.7	3.0	2.24	21.66
PROPANE	9.0	6.34	4.3	7.6	5.59	3.6	9.0	7.48	4.3	8.3	6.23	3.97
PROPYLENE	1.5	1.05	14.1	0.0	0.00	0.0	0.4	0.33	3.7	0.4	0.31	3.93
ACETYLENE	0.1	0.04	0.0	0.0	0.01	0.0	0.0	0.03	0.0	0.0	0.02	0.01
PROPADIENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
BUTANE	2.2	1.51	2.2	0.9	0.65	0.9	2.0	1.66	2.0	1.4	1.09	1.48
TRANS-2-BUTENE	0.2	0.12	1.7	0.0	0.00	0.0	0.2	0.14	1.6	0.1	0.06	0.80
1-BUTENE	0.3	0.21	2.6	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.05	0.55
2-METHYLPROPENE (ISOBUTYLENE)	0.3	0.24	1.8	0.0	0.00	0.0	0.2	0.15	0.9	0.1	0.09	0.63
2,2-DIMETHYLPROPANE (NEOPENTANE)	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
PROPYLENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-BUTADIENE	0.2	0.16	2.4	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.03	0.50
2-METHYLPROPANE (ISOBUTANE)	2.1	1.49	2.6	0.8	0.59	1.0	2.0	1.70	2.5	1.4	1.07	1.71
1-BUTYNE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
METHANOL	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-BUTENE	0.2	0.11	1.6	0.0	0.00	0.0	0.2	0.13	1.6	0.1	0.06	0.78
3-METHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHANOL	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLBUTANE (ISOPENTANE)	3.0	2.13	4.2	0.0	0.00	0.0	1.3	1.08	1.8	1.0	0.74	1.35
2-BUTYNE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
PENTANE	0.4	0.29	0.4	0.0	0.00	0.0	0.2	0.17	0.2	0.1	0.11	0.15
UNIDENTIFIED C5 OLEFINS	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-1,3-BUTADIENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-PENTENE	0.2	0.13	1.6	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.03	0.33
3,3-DIMETHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-2-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.03	0.2	0.0	0.01	0.07
CYCLOPENTADIENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLBUTANE	0.2	0.14	0.2	0.2	0.17	0.2	0.2	0.16	0.2	0.2	0.16	0.18
CYCLOPENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-METHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.0	0.0	0.00	0.01
2,3-DIMETHYLBUTANE	0.1	0.07	0.1	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.02	0.02
MTBE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-METHYL-CIS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLPENTANE	0.1	0.08	0.2	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.02	0.04
4-METHYL-TRANS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYLPENTANE	0.0	0.01	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.01
2-METHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEXANE	0.1	0.07	0.1	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.02	0.02
UNIDENTIFIED C6 OLEFINS	0.2	0.12	1.2	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.03	0.24
TRANS-3-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-3-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-TRANS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYLCYCLOPENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETBE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-CIS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLPENTANE	0.0	0.02	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.01
METHYLCYCLOPENTANE	0.0	0.02	0.1	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.02
2,4-DIMETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3,3-TRIMETHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,3-TRIMETHYLBUTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,4-DIMETHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYLCYCLOPENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
BENZENE	0.5	0.34	0.2	0.0	0.00	0.0	0.2	0.17	0.1	0.2	0.12	0.07
3-METHYL-1-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,3-DIMETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,1-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CYCLOHEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00

3-METHYLHEXANE	0.0	0.02	0.0	0.1	0.10	0.2	0.0	0.01	0.0	0.1	0.06	0.12
CIS-1,3-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-ETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,2-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,3-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,4-TRIMETHYLPENTANE	0.6	0.39	0.5	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.09	0.11
2-METHYL-1-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-3-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEPTANE	0.2	0.16	0.2	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.04	0.04
CIS-3-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNIDENTIFIED C7	0.2	0.14	0.9	0.3	0.19	1.2	0.0	0.00	0.0	0.2	0.13	0.80
2-METHYL-2-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-TRANS-3-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-ETHYL-CIS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4,4-TRIMETHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,4-TRIMETHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYL-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
METHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1,2-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,1,3-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4,4-TRIMETHYL-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,3-TRIMETHYLPENTANE	0.2	0.17	0.3	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.04	0.06
2,5-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLHEXANE	0.1	0.04	0.1	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.02
1-TRANS-2-CIS-4-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,3-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-TRANS-2-CIS-3-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3,4-TRIMETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3,3-TRIMETHYLPENTANE	0.1	0.05	0.1	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.02
TOLUENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,1,2-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,4-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,4,4-TETRAMETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-AND-TRANS-3,4-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-METHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-3-ETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-3-ETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-CIS-2-TRANS-3-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1,3-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,4-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-ETHYLHEXANE	0.2	0.12	0.2	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.03	0.04
2,2,5-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1-METHYL-3-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1-METHYL-3-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,1-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1-METHYL-2-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-1-ETHYL-CYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4,4-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,4-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,2-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-4-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
OCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNIDENTIFIED C8	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,3-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1,4-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ISOPROPYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3,5-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1-METHYL-2-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-2-ETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLHEPTANE	2.9	2.02	3.9	6.1	4.47	8.1	2.1	1.78	2.9	4.3	3.26	5.79
4,4-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1,2-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
PROPYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
PROPYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-4-ETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,6-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,1,3-TRIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,5-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,3-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00



3,5-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHYLBENZENE	0.0	0.00	0.0	0.0	0.02	0.1	0.0	0.01	0.0	0.0	0.01	0.04
2,3,4-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
m-& p-XYLENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-METHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,4-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-ETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
STYRENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
o-XYLENE	0.0	0.01	0.1	0.0	0.00	0.0	0.0	0.01	0.1	0.0	0.00	0.04
1-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-3-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-3-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
NONANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ISOPROPYLBENZENE (CUMENE)	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
n-PROPYLBENZENE	0.1	0.08	0.2	0.0	0.02	0.1	0.0	0.03	0.1	0.0	0.03	0.10
1-METHYL-3-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-4-ETHYLBENZENE	0.1	0.07	0.7	0.1	0.08	0.7	0.1	0.08	0.7	0.1	0.07	0.71
1,3,5-TRIMETHYLBENZENE	0.2	0.13	1.8	0.2	0.16	2.2	0.2	0.15	1.9	0.2	0.15	2.06
1-METHYL-2-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,4-TRIMETHYLBENZENE	1.2	0.84	10.6	1.0	0.75	8.9	1.3	1.05	11.1	1.1	0.84	9.88
TERT-BUTYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-DECENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
DECANE	1.1	0.74	0.5	1.8	1.31	0.8	0.7	0.81	0.3	1.3	1.01	0.63
ISOBUTYLBENZENE	1.0	0.70	1.9	1.7	1.23	3.1	0.7	0.58	1.3	1.3	0.95	2.36
METHYLPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
BUTYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-DIMETHYL-5-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
S-BUTYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-3-ISOPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,3-TRIMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-4-ISOPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
INDAN	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-2-ISOPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-DIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,4-DIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-3-N-PROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-4-N-PROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2-DIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-2-N-PROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,4-DIMETHYL-2-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-DIMETHYL-4-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2-DIMETHYL-4-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-DIMETHYL-2-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNDECANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2-DIMETHYL-3-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,4,5-TETRAMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLBUTYLBENZENE (sec AMYLBENZENE)	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,4-DIMETHYLCUMENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,3,5-TETRAMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TERT-1-BUT-2-METHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,3,4-TETRAMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
N-PENT-BENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TERT-1-BUT-3,5-DIMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TERT-1-BUTYL-4-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
NAPHTHALENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
DODECANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3,5-TRIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,4-TRIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEXYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNIDENTIFIED C9-C12+	0.9	0.61	3.3	1.2	0.85	4.4	0.6	0.48	2.2	0.9	0.70	3.55
FORMALDEHYDE	10.2	7.15	72.8	0.0	0.00	0.0	0.9	0.76	6.6	2.4	1.78	16.89
ACETALDEHYDE	0.6	0.45	3.5	0.0	0.00	0.0	0.2	0.19	1.2	0.2	0.15	1.07
ACROLEIN	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ACETONE	0.0	0.00	0.0	0.4	0.27	0.2	0.0	0.00	0.0	0.2	0.14	0.11
PROPIONALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CROTONALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ISOBUTYRALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.2	0.14	0.9	0.0	0.03	0.24
METHYL ETHYL KETONE	0.0	0.00	0.0	0.0	0.00	0.0	0.2	0.14	0.2	0.0	0.03	0.05
BENZALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEXANALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00

TEST NUMBER: G72031CNGFTP20K  
 TEST CAR: 1995 F150 PICKUP #31  
 TEST DATE: 7/31/97  
 TEST FUEL: CNG

COMPOUND	BAG 1	BAG 1	BAG 1	BAG 2	BAG 2	BAG 2	BAG 3	BAG 3	BAG 3	FTP		
	MG/M	WEIGHT NMKG %	OZONE, MG/M	MG/M	WEIGHT NMKG %	OZONE, MG/M	MG/M	WEIGHT NMKG %	OZONE, MG/M	MG/M	WEIGHT NMKG %	OZONE, MG/M
METHANE	2130.8		31.5	2636.4		39.0	2176.0		32.2	2405.1		35.60
ETHANE	81.6	67.67	20.4	104.2	90.20	26.0	87.0	74.10	21.7	94.8	80.96	23.69
ETHYLENE	11.0	9.15	80.4	0.1	0.07	0.6	2.3	1.97	16.9	3.0	2.53	21.62
PROPANE	8.9	7.41	4.3	7.4	6.38	3.5	8.5	7.27	4.1	8.0	6.84	3.85
PROPYLENE	1.2	1.00	11.3	0.1	0.07	0.8	0.3	0.25	2.8	0.4	0.32	3.51
ACETYLENE	0.0	0.02	0.0	0.0	0.01	0.0	0.0	0.01	0.0	0.0	0.01	0.01
PROPADIENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
BUTANE	2.3	1.94	2.4	1.3	1.09	1.3	2.6	2.24	2.7	1.9	1.59	1.90
TRANS-2-BUTENE	0.1	0.12	1.4	0.0	0.00	0.0	0.1	0.09	1.0	0.1	0.05	0.58
1-BUTENE	0.2	0.19	2.1	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.04	0.43
2-METHYLPROPENE (ISOBUTYLENE)	0.3	0.29	1.8	0.2	0.18	1.1	0.3	0.24	1.5	0.3	0.22	1.35
2,2-DIMETHYLPROPANE (NEOPENTANE)	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.04	0.0	0.0	0.01	0.01
PROPYNE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-BUTADIENE	0.2	0.20	2.6	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.04	0.55
2-METHYLPROPANE (ISOBUTANE)	1.5	1.24	1.8	0.8	0.71	1.0	1.9	1.64	2.3	1.3	1.08	1.53
1-BUTYNE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
METHANOL	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-BUTENE	0.1	0.11	1.3	0.0	0.00	0.0	0.1	0.07	0.8	0.0	0.04	0.49
3-METHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHANOL	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLBUTANE (ISOPENTANE)	2.4	1.97	3.3	0.9	0.79	1.3	4.9	4.21	6.8	2.3	1.98	3.20
2-BUTYNE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
PENTANE	0.8	0.66	0.8	0.5	0.39	0.5	1.2	1.04	1.3	0.7	0.63	0.77
UNIDENTIFIED C5 OLEFINS	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-1,3-BUTADIENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-PENTENE	0.1	0.08	0.8	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.02	0.18
3,3-DIMETHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-2-BUTENE	0.2	0.18	1.4	0.0	0.00	0.0	0.2	0.15	1.2	0.1	0.08	0.61
TERT-BUTANOL	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CYCLOPENTADIENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLBUTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.2	0.13	0.1	0.0	0.04	0.03
CYCLOPENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-METHYL-1-PENTENE	0.1	0.08	0.5	0.0	0.00	0.0	0.1	0.11	0.6	0.1	0.05	0.28
3-METHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYLBUTANE	0.1	0.05	0.1	0.0	0.00	0.0	0.2	0.17	0.2	0.1	0.06	0.07
MTBE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-METHYL-CIS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLPENTANE	0.2	0.19	0.3	0.0	0.03	0.1	0.4	0.31	0.6	0.2	0.14	0.25
4-METHYL-TRANS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYLPENTANE	0.1	0.10	0.2	0.0	0.00	0.0	0.3	0.24	0.4	0.1	0.09	0.16
2-METHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEXANE	0.1	0.09	0.1	0.0	0.00	0.0	0.3	0.22	0.2	0.1	0.08	0.09
UNIDENTIFIED C6 OLEFINS	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-3-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-3-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
DIISOPROPYL ETHER	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-TRANS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYLCYCLOPENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETBE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-CIS-2-PENTENE	0.1	0.07	0.5	0.0	0.00	0.0	0.1	0.08	0.6	0.0	0.04	0.28
2,2-DIMETHYLPENTANE, NOTE A	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
METHYLCYCLOPENTANE, NOTE A	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.0	0.0	0.00	0.01
2,2,3-TRIMETHYLBUTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,4-DIMETHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYLCYCLOPENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
BENZENE	0.1	0.06	0.0	0.0	0.00	0.0	0.1	0.09	0.0	0.0	0.04	0.02
3-METHYL-1-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,3-DIMETHYLPENTANE	0.1	0.06	0.1	0.0	0.00	0.0	0.1	0.09	0.1	0.0	0.04	0.03
CYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.2	0.14	0.2	0.0	0.04	0.06
2-METHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.11	0.2	0.0	0.03	0.05
1,1-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TERT-AMYL METHYL ETHER	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CYCLOHEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00



3-METHYLHEXANE	0.1	0.08	0.1	0.0	0.00	0.0	0.1	0.09	0.1	0.0	0.04	0.07
CIS-1,3-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-ETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,2-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,3-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,4-TRIMETHYLPENTANE	0.8	0.68	0.7	0.0	0.00	0.0	3.1	2.61	2.9	1.0	0.86	0.94
2-METHYL-1-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-3-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-3-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNIDENTIFIED C7	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-2-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-TRANS-3-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-ETHYL-CIS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4,4-TRIMETHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYL-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
METHYLCYCLOHEXANE	0.1	0.12	0.3	0.0	0.00	0.0	0.1	0.11	0.2	0.1	0.05	0.12
CIS-1,2-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,1,3-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4,4-TRIMETHYL-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,3-TRIMETHYLPENTANE	0.1	0.09	0.1	0.0	0.00	0.0	0.2	0.15	0.2	0.1	0.06	0.09
2,5-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLHEXANE	0.1	0.10	0.2	0.0	0.00	0.0	0.3	0.27	0.5	0.1	0.10	0.17
1-TRANS-2-CIS-4-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,3-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-TRANS-2-CIS-3-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3,4-TRIMETHYLPENTANE	0.2	0.15	0.3	0.0	0.00	0.0	0.5	0.43	0.8	0.2	0.15	0.28
2,3,3-TRIMETHYLPENTANE	0.1	0.11	0.2	0.0	0.00	0.0	0.5	0.43	0.8	0.2	0.14	0.20
TOLUENE	1.3	1.07	3.5	0.0	0.00	0.0	0.4	0.35	1.1	0.4	0.32	1.04
2,3-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,1,2-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,4-DIMETHYLHEXANE, NOTE B	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-METHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-CIS,2-TRANS,3-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1,3-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,4-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-ETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,5-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.2	0.18	0.2	0.1	0.04	0.05
TRANS-1-METHYL-3-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1-METHYL-3-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,1-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1-METHYL-2-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-1-ETHYL-CYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4,4-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,4-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,2-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-4-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
OCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNIDENTIFIED C8	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,3-DIMETHYLCYCLOHEXANE, NOTE C	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ISOPROPYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3,5-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1-METHYL-2-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4,4-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1,2-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,6-DIMETHYLHEPTANE, NOTE D	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,1,3-TRIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,5-DIMETHYLHEPTANE, NOTE E	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,3-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,5-DIMETHYLHEPTANE, NOTE E	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3,4-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
m- & p-XYLENE	0.1	0.10	0.9	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.02	0.18
4-METHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,4-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-ETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00

STYRENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
o-XYLENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-3-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-3-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
NONANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ISOPROPYLBENZENE (CUMENE)	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
n-PROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-3-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-4-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3,5-TRIMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-2-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,4-TRIMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TERT-BUTYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-DECENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
DECANE, NOTE F	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ISOBUTYLBENZENE, NOTE F	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-DIMETHYL-5-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
METHYLPROPYLBENZENE (sec butylbenzene)	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-3-ISOPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,3-TRIMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-4-ISOPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
INDAN	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-2-ISOPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-DIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,4-DIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-3-N-PROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-4-N-PROPYLBENZENE, NOTE G	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2-DIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-2-N-PROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,4-DIMETHYL-2-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-DIMETHYL-4-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2-DIMETHYL-4-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-DIMETHYL-2-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNDECANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2-DIMETHYL-3-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,4,5-TETRAMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLBUTYLBENZENE (sec AMYLBENZENE)	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,4-DIMETHYLCUMENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,3,5-TETRAMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TERT-1-BUT-2-METHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,3,4-TETRAMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
N-PENT-BENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TERT-1-BUT-3,5-DIMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TERT-1-BUTYL-4-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
NAPHTHALENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
DODECANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3,5-TRIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,4-TRIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEXYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNIDENTIFIED C9-C12+	0.2	0.17	0.8	0.0	0.00	0.0	0.2	0.14	0.6	0.1	0.08	0.34
FORMALDEHYDE	4.9	4.10	35.3	0.0	0.00	0.0	0.2	0.14	1.2	1.1	0.91	7.65
ACETALDEHYDE	0.2	0.16	1.1	0.0	0.00	0.0	0.1	0.05	0.3	0.1	0.05	0.31
ACROLEIN	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ACETONE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
PROPIONALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CROTONALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.05	0.3	0.0	0.01	0.08
ISOBUTYRALDEHYDE, NOTE H	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
METHYL ETHYL KETONE, NOTE H	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
BENZALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ISOVALERALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
VALERALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
O-TOLUALDEHYDE	0.2	0.16	-0.1	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.03	-0.02
M/P-TOLUALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEXANALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
DIMETHYLBENZALDEHYDE	0.0	0.00	0.0	0.1	0.07	-0.0	0.0	0.00	0.0	0.0	0.03	-0.02

- A - 2,2-Dimethylpentane and methylcyclopentane co-elute. GC peak area split equally between the two compounds.  
B - 3-Methyl-3-ethylpentane co-elutes with reported compound. Not reported separately.  
C - Cis-1,4-Dimethylcyclohexane co-elutes with reported compound. Not reported separately.  
D - Propylcyclopentane co-elutes with reported compound. Not reported separately.  
E - 2,5-Dimethylheptane and 3,5-dimethylheptane co-elute. GC peak area split equally between the two compounds.  
F - Decane and isobutylbenzene co-elute. GC peak area split equally between the two compounds.  
G - n-Butylbenzene co-elutes with reported compound. Not reported separately.  
H - Isobutyraldehyde and methyl ethyl ketone co-elute. LC peak area split equally between the two compounds.

TEST NUMBER: G72031FTP4K  
 TEST CAR: 1995 FORD F-150 PICKUP #31  
 TEST DATE: 2/27/96  
 TEST FUEL: EEE

COMPOUND	BAG 1 MG/MI	BAG 1 WEIGHT NMOG %	BAG 1 OZONE, MG/MI	BAG 2 MG/MI	BAG 2 WEIGHT NMOG %	BAG 2 OZONE MG/MI	BAG 3 MG/MI	BAG 3 WEIGHT NMOG %	BAG 3 OZONE MG/MI	FTP MG/MI	FTP WEIGHT NMOG %	FTP OZONE MG/MI
METHANE	198.0		2.9	184.5		2.4	175.8		2.6	174.5		2.58
ETHANE	28.4	2.06	7.1	28.0	26.91	7.0	0.0	0.00	0.0	20.4	3.76	5.10
ETHYLENE	90.2	6.56	657.3	1.8	1.77	13.5	57.0	7.68	415.5	35.3	6.50	257.03
PROPANE	3.5	0.28	1.7	2.3	2.17	1.1	3.9	0.52	1.9	3.0	0.55	1.42
PROPYLENE	48.4	3.52	455.1	0.5	0.50	4.9	23.6	3.18	221.6	16.8	3.09	157.48
ACETYLENE	11.6	0.85	5.8	0.1	0.09	0.0	0.0	0.00	0.0	2.5	0.45	1.23
PROPADIENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
BUTANE	9.4	0.68	9.6	4.4	4.23	4.5	7.6	1.02	7.7	6.3	1.16	8.44
TRANS-2-BUTENE	8.2	0.60	81.9	0.2	0.15	1.6	10.5	1.42	104.6	4.7	0.86	48.48
1-BUTENE	8.3	0.60	74.0	0.1	0.10	0.9	5.4	0.73	48.5	3.3	0.60	29.08
2-METHYLPROPENE (ISOBUTYLENE)	35.3	2.57	187.7	0.2	0.18	1.0	16.4	2.21	86.9	11.9	2.20	63.19
2,2-DIMETHYLPROPANE (NEOPENTANE)	1.3	0.10	0.5	0.2	0.17	0.1	0.9	0.12	0.3	0.6	0.11	0.22
PROPENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-BUTADIENE	1.3	0.09	13.6	0.0	0.00	0.0	0.0	0.00	0.0	0.3	0.05	2.82
2-METHYLPROPANE (ISOBUTANE)	17.3	1.26	21.0	6.0	5.75	7.3	14.2	1.92	17.2	10.6	1.95	12.82
1-BUTYNE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
METHANOL	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-BUTENE	16.4	1.19	162.7	0.3	0.27	2.7	13.4	1.80	132.7	7.2	1.33	71.54
3-METHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHANOL	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLBUTANE (ISOPENTANE)	166.5	12.11	229.8	28.8	27.61	39.7	118.4	15.96	163.4	81.9	15.10	112.97
2-BUTYNE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-PENTENE	1.9	0.14	11.9	0.0	0.00	0.0	0.3	0.04	1.8	0.5	0.09	2.94
2-METHYL-1-BUTENE	2.3	0.16	11.1	0.0	0.00	0.0	0.8	0.11	4.0	0.7	0.13	3.39
PENTANE	16.6	1.21	17.3	3.1	2.94	3.2	11.5	1.55	12.0	8.2	1.51	8.52
UNIDENTIFIED C5 OLEFINS	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-1,3-BUTADIENE	0.4	0.03	4.0	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02	0.83
TRANS-2-PENTENE	1.1	0.08	9.9	0.0	0.00	0.0	0.9	0.13	8.2	0.5	0.09	4.30
3,3-DIMETHYL-1-BUTENE	0.2	0.02	1.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.21
CIS-2-PENTENE	1.0	0.07	8.6	0.0	0.00	0.0	0.5	0.07	4.8	0.4	0.06	3.09
2-METHYL-2-BUTENE	5.1	0.37	32.6	0.4	0.35	2.3	3.1	0.42	19.8	2.1	0.39	13.38
CYCLOPENTADIENE	0.8	0.06	8.3	0.0	0.00	0.0	0.0	0.00	0.0	0.2	0.03	1.29
2,2-DIMETHYLBUTANE	1.1	0.08	0.9	0.1	0.13	0.1	0.7	0.10	0.6	0.5	0.09	0.40
CYCLOPENTENE	2.0	0.14	15.1	0.0	0.00	0.0	1.2	0.17	9.4	0.7	0.14	5.71
4-METHYL-1-PENTENE	0.4	0.03	1.6	0.0	0.00	0.0	0.1	0.01	0.5	0.1	0.02	0.46
3-METHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CYCLOPENTANE	1.4	0.10	3.3	0.2	0.18	0.5	0.8	0.11	1.9	0.6	0.11	1.45
2,3-DIMETHYLBUTANE	8.1	0.59	8.7	0.7	0.69	0.8	4.9	0.66	5.2	3.4	0.62	3.62
MTBE	0.8	0.06	0.5	0.0	0.00	0.0	0.2	0.03	0.1	0.2	0.04	0.14
2,3-DIMETHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-METHYL-CIS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLPENTANE	9.3	0.68	14.2	0.8	0.75	1.2	5.8	0.75	8.5	3.9	0.71	5.90
4-METHYL-TRANS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYLPENTANE	5.3	0.39	8.1	0.4	0.37	0.6	3.2	0.43	4.8	2.2	0.40	3.30
3-METHYL-1-PENTENE	0.2	0.01	0.8	0.0	0.00	0.0	0.1	0.01	0.2	0.1	0.01	0.23
1-HEXENE	0.4	0.03	1.9	0.0	0.00	0.0	0.1	0.01	0.2	0.1	0.02	0.46
HEXANE	7.9	0.58	7.8	0.8	0.73	0.7	4.7	0.64	4.6	3.3	0.62	3.27
UNIDENTIFIED C6 OLEFINS	0.5	0.04	3.5	0.0	0.00	0.0	0.2	0.03	1.6	0.2	0.03	1.17
TRANS-3-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-3-HEXENE	0.3	0.02	1.9	0.0	0.00	0.0	0.2	0.03	1.7	0.1	0.02	0.86
TRANS-2-HEXENE	0.5	0.04	3.3	0.0	0.00	0.0	0.4	0.05	2.6	0.2	0.04	1.41
3-METHYL-TRANS-2-PENTENE	0.6	0.05	4.1	0.0	0.00	0.0	0.4	0.05	2.5	0.2	0.04	1.55
2-METHYL-2-PENTENE	0.6	0.05	4.2	0.0	0.00	0.0	0.3	0.04	1.8	0.2	0.04	1.36
3-METHYLCYCLOPENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-HEXENE	0.5	0.03	3.1	0.0	0.00	0.0	0.2	0.03	1.5	0.2	0.03	1.05
ETBE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-CIS-2-PENTENE	0.5	0.04	3.5	0.0	0.00	0.0	0.4	0.05	2.4	0.2	0.04	1.37
2,2-DIMETHYLPENTANE	2.5	0.18	3.5	0.2	0.18	0.3	1.4	0.20	2.0	1.0	0.19	1.42
METHYLCYCLOPENTANE	2.5	0.18	6.9	0.2	0.18	0.5	1.4	0.19	4.0	1.0	0.18	2.80
2,4-DIMETHYLPENTANE	8.8	0.64	15.7	0.6	0.53	1.0	5.2	0.70	9.3	3.5	0.65	8.31
2,3,3-TRIMETHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,3-TRIMETHYLBUTANE	0.5	0.04	0.6	0.0	0.00	0.0	0.4	0.05	0.5	0.2	0.04	0.27
3,4-DIMETHYL-1-PENTENE	0.1	0.01	0.4	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.09
1-METHYLCYCLOPENTENE	0.6	0.04	3.4	0.0	0.00	0.0	0.2	0.03	1.1	0.2	0.03	1.02
BENZENE	52.2	3.80	21.9	1.8	1.89	0.7	27.8	3.74	11.7	19.3	3.57	8.12
3-METHYL-1-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,3-DIMETHYLPENTANE	0.4	0.03	0.3	0.0	0.00	0.0	0.3	0.05	0.2	0.2	0.03	0.13
CYCLOHEXANE	5.0	0.36	6.3	0.2	0.20	0.3	3.0	0.40	3.8	1.9	0.36	2.50
2-METHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	2.0	0.27	2.2	0.6	0.10	0.60
2,3-DIMETHYLPENTANE	8.5	0.62	12.9	0.4	0.41	0.6	2.8	0.38	4.3	2.8	0.51	4.17
1,1-DIMETHYLCYCLOPENTANE	0.5	0.04	1.0	0.0	0.00	0.0	0.3	0.04	0.5	0.2	0.03	0.34
CYCLOHEXENE	0.4	0.03	2.1	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.01	0.42

3-METHYLHEXANE	3.0	0.22	4.2	0.2	0.18	0.3	1.7	0.23	2.4	1.2	0.22	1.66
CIS-1,3-DIMETHYLCYCLOPENTANE	0.8	0.06	2.1	0.0	0.00	0.0	0.4	0.05	1.0	0.3	0.05	0.71
3-ETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,2-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,3-DIMETHYLCYCLOPENTANE	0.7	0.05	1.9	0.0	0.00	0.0	0.4	0.05	1.0	0.3	0.05	0.67
1-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,4-TRIMETHYLPENTANE	142.7	10.38	132.7	11.1	10.63	10.3	87.4	11.78	81.3	59.3	10.93	55.11
2-METHYL-1-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-3-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEPTANE	5.1	0.37	4.1	0.2	0.20	0.2	2.8	0.38	2.3	1.9	0.36	1.57
CIS-3-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNIDENTIFIED C7	0.9	0.07	4.2	0.0	0.00	0.0	0.2	0.02	0.7	0.2	0.04	1.07
2-METHYL-2-HEXENE	0.6	0.04	3.1	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02	0.64
3-METHYL-TRANS-3-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-HEPTENE	0.4	0.03	2.3	0.0	0.00	0.0	0.1	0.01	0.7	0.1	0.02	0.67
3-ETHYL-CIS-2-PENTENE	0.3	0.02	1.5	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.01	0.31
2,4,4-TRIMETHYL-1-PENTENE	0.5	0.04	1.4	0.0	0.00	0.0	0.1	0.01	0.3	0.1	0.03	0.37
2,2,4-TRIMETHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYL-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-HEPTENE	0.6	0.04	3.1	0.0	0.00	0.0	0.2	0.03	1.2	0.2	0.03	0.57
METHYLCYCLOHEXANE	7.4	0.54	13.7	0.3	0.27	0.5	4.0	0.55	7.5	2.8	0.51	5.16
CIS-1,2-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,1,3-TRIMETHYLCYCLOPENTANE	0.6	0.04	1.1	0.0	0.00	0.0	0.3	0.04	0.6	0.2	0.04	0.38
2,4,4-TRIMETHYL-2-PENTENE	0.1	0.01	0.5	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.11
2,2,3-TRIMETHYLPENTANE	18.7	1.36	22.4	1.0	0.96	1.2	9.8	1.32	11.8	7.1	1.30	8.49
2,5-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLHEXANE	21.4	1.55	32.1	0.6	0.58	0.9	12.9	1.73	19.3	8.3	1.53	12.40
1-TRANS-2-CIS-4-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,3-DIMETHYLHEXANE	0.5	0.03	0.6	0.0	0.00	0.0	0.3	0.04	0.3	0.2	0.03	0.21
1-TRANS-2-CIS-3-TRIMETHYLCYCLOPENTANE	0.3	0.02	0.5	0.0	0.00	0.0	0.2	0.02	0.3	0.1	0.02	0.20
2,3,4-TRIMETHYLPENTANE	25.3	1.84	40.4	1.0	1.00	1.7	14.5	1.98	23.2	9.8	1.80	15.61
2,3,3-TRIMETHYLPENTANE	33.4	2.43	40.0	1.8	1.56	2.0	21.4	2.89	25.7	13.6	2.51	16.35
TOLUENE	220.4	18.03	601.7	1.5	1.45	4.1	109.5	14.76	298.9	76.4	14.10	208.65
2,3-DIMETHYLHEXANE	15.4	1.12	20.4	0.0	0.00	0.0	7.9	1.07	10.4	5.4	0.99	7.08
1,1,2-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLHEPTANE	2.8	0.19	2.5	0.0	0.00	0.0	1.4	0.19	1.3	0.9	0.17	0.87
3,4-DIMETHYLHEXANE	2.7	0.19	3.2	0.0	0.00	0.0	1.4	0.19	1.7	0.9	0.17	1.13
2,2,4,4-TETRAMETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-AND-TRANS-3,4-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-METHYLHEPTANE	0.5	0.04	0.6	0.0	0.00	0.0	0.3	0.04	0.4	0.2	0.04	0.23
2-METHYL-3-ETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-3-ETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYLHEPTANE	1.7	0.13	1.7	0.0	0.00	0.0	0.9	0.12	0.9	0.6	0.11	0.60
1-CIS,2-TRANS,3-TRIMETHYLCYCLOPENTANE	1.3	0.10	2.8	0.0	0.00	0.0	0.7	0.09	1.4	0.5	0.09	0.90
CIS-1,3-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,4-DIMETHYLCYCLOHEXANE	0.5	0.04	1.0	0.0	0.00	0.0	0.3	0.04	0.5	0.2	0.03	0.34
3-ETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,5-TRIMETHYLHEXANE	13.3	0.97	12.9	0.5	0.47	0.5	7.4	1.00	7.2	5.1	0.93	4.90
TRANS-1-METHYL-3-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1-METHYL-3-ETHYLCYCLOPENTANE	0.2	0.01	0.3	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.07
1,1-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1-METHYL-2-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-1-ETHYL-CYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4,4-TRIMETHYLHEXANE	0.6	0.05	0.7	0.0	0.00	0.0	0.4	0.05	0.4	0.2	0.04	0.26
2,2,4-TRIMETHYLHEXANE	0.6	0.04	0.7	0.0	0.00	0.0	0.3	0.05	0.4	0.2	0.04	0.24
TRANS-1,2-DIMETHYLCYCLOHEXANE	0.7	0.05	1.3	0.0	0.00	0.0	0.4	0.06	0.8	0.3	0.05	0.50
1-OCTENE	0.1	0.01	0.4	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.08
TRANS-4-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
OCTANE	2.4	0.17	1.5	0.0	0.00	0.0	1.3	0.18	0.8	0.9	0.16	0.52
UNIDENTIFIED C8	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-OCTENE	0.4	0.03	2.3	0.0	0.00	0.0	0.3	0.04	1.5	0.2	0.03	0.87
TRANS-1,3-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1,4-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ISOPROPYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3,5-TRIMETHYLHEXANE	1.8	0.13	2.0	0.0	0.00	0.0	1.0	0.13	1.1	0.6	0.12	0.72
CIS-1-METHYL-2-ETHYLCYCLOPENTANE	0.1	0.01	0.2	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.05
2-METHYL-2-ETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLHEPTANE	1.1	0.08	1.5	1.0	0.93	1.3	0.7	0.10	1.0	0.9	0.17	1.24
4,4-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1,2-DIMETHYLCYCLOHEXANE	0.1	0.01	0.2	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.04
PROPYLCYCLOPENTANE	0.3	0.02	0.8	0.0	0.00	0.0	0.2	0.02	0.4	0.1	0.02	0.28
ETHYLCYCLOHEXANE	0.7	0.05	1.5	0.0	0.00	0.0	0.4	0.05	0.8	0.3	0.05	0.51
PROPYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-4-ETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,6-DIMETHYLHEPTANE	0.3	0.03	0.4	0.0	0.00	0.0	0.2	0.02	0.2	0.1	0.02	0.14
1,1,3-TRIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,5-DIMETHYLHEPTANE	0.6	0.04	0.7	0.0	0.00	0.0	0.3	0.04	0.4	0.2	0.04	0.24
3,3-DIMETHYLHEPTANE	0.2	0.01	0.2	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.04

3,5-DIMETHYLHEPTANE	0.6	0.04	0.7	0.0	0.00	0.0	0.3	0.04	0.4	0.2	0.04	0.24
ETHYLBENZENE	9.5	0.69	25.7	0.1	0.09	0.2	5.5	0.74	14.8	3.5	0.65	9.51
2,3,4-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
m-&p-XYLENE	14.8	1.08	109.2	0.1	0.10	0.8	8.4	1.13	61.7	5.4	1.00	39.91
4-METHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,4-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-ETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLOCTANE	1.0	0.07	1.1	0.0	0.00	0.0	0.5	0.07	0.6	0.3	0.06	0.40
3-METHYLOCTANE	0.5	0.03	0.5	0.0	0.00	0.0	0.3	0.04	0.3	0.2	0.03	0.19
STYRENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
o-XYLENE	7.9	0.57	50.8	0.3	0.24	1.6	4.3	0.58	27.9	2.9	0.54	19.01
1-NONENE	0.9	0.07	2.1	0.0	0.00	0.0	0.5	0.06	1.0	0.3	0.06	0.72
TRANS-3-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-3-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
NONANE	1.7	0.13	0.9	0.0	0.00	0.0	0.9	0.12	0.5	0.6	0.11	0.32
TRANS-2-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ISOPROPYLBENZENE (CUMENE)	1.8	0.13	4.0	0.0	0.00	0.0	0.8	0.10	1.7	0.6	0.11	1.31
2,2-DIMETHYLOCTANE	0.4	0.03	0.4	0.0	0.00	0.0	0.1	0.02	0.1	0.1	0.02	0.12
2,4-DIMETHYLOCTANE	0.3	0.02	0.3	0.0	0.00	0.0	0.1	0.01	0.1	0.1	0.02	0.08
n-PROPYLBENZENE	8.0	0.58	17.0	0.0	0.00	0.0	3.0	0.41	6.4	2.5	0.46	5.29
1-METHYL-3-ETHYLBENZENE	33.3	2.42	239.4	0.4	0.35	2.6	13.7	1.85	98.7	10.8	2.00	77.98
1-METHYL-4-ETHYLBENZENE	15.0	1.09	107.7	0.3	0.32	2.4	5.4	0.73	39.1	4.8	0.88	34.27
1,3,5-TRIMETHYLBENZENE	17.2	1.25	174.2	0.2	0.23	2.4	6.4	0.86	64.9	5.4	1.00	55.12
1-METHYL-2-ETHYLBENZENE	12.5	0.91	90.2	0.0	0.00	0.0	4.9	0.66	35.4	3.9	0.73	28.37
1,2,4-TRIMETHYLBENZENE	50.1	3.64	442.1	0.2	0.21	2.0	15.1	2.04	133.6	14.6	2.70	129.09
TERT-BUTYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-DECENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
DECANE	0.8	0.04	0.3	0.2	0.19	0.1	0.4	0.05	0.2	0.3	0.06	0.15
ISOBUTYLBENZENE	0.5	0.04	1.0	0.2	0.18	0.3	0.2	0.03	0.4	0.3	0.05	0.50
METHYLPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
BUTYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-DIMETHYL-5-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
S-BUTYLBENZENE	0.8	0.06	1.5	0.0	0.00	0.0	0.3	0.05	0.6	0.3	0.05	0.48
1-METHYL-3-ISOPROPYLBENZENE	7.5	0.55	44.1	0.0	0.00	0.0	2.5	0.34	14.6	2.2	0.41	13.13
1,2,3-TRIMETHYLBENZENE	0.8	0.04	4.9	0.0	0.00	0.0	0.2	0.03	2.0	0.2	0.03	1.57
1-METHYL-4-ISOPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
INDAN	5.7	0.41	6.0	0.0	0.00	0.0	2.1	0.28	2.2	1.8	0.32	1.88
1-METHYL-2-ISOPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-DIETHYLBENZENE	0.7	0.05	4.2	0.0	0.00	0.0	0.4	0.05	2.3	0.2	0.04	1.50
1,4-DIETHYLBENZENE	2.8	0.19	17.0	0.0	0.00	0.0	1.1	0.15	7.2	0.8	0.16	5.48
1-METHYL-3-N-PROPYLBENZENE	2.3	0.17	15.1	0.0	0.00	0.0	0.7	0.09	4.4	0.7	0.12	4.32
1-METHYL-4-N-PROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2-DIETHYLBENZENE	3.2	0.23	20.4	0.0	0.00	0.0	1.0	0.14	6.5	0.9	0.17	8.02
1-METHYL-2-N-PROPYLBENZENE	0.4	0.03	2.3	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.01	0.48
1,4-DIMETHYL-2-ETHYLBENZENE	1.1	0.08	10.0	0.0	0.00	0.0	0.8	0.08	5.6	0.4	0.07	3.59
1,3-DIMETHYL-4-ETHYLBENZENE	1.3	0.10	12.2	0.0	0.00	0.0	0.6	0.08	5.1	0.4	0.08	3.91
1,2-DIMETHYL-4-ETHYLBENZENE	1.6	0.12	14.5	0.0	0.00	0.0	0.3	0.04	2.5	0.4	0.07	3.67
1,3-DIMETHYL-2-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNDECANE	0.8	0.04	0.3	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02	0.05
1,2-DIMETHYL-3-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,4,5-TETRAMETHYLBENZENE	0.2	0.01	1.5	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.31
2-METHYLBUTYLBENZENE (sec AMYLBENZENE)	0.3	0.02	0.5	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.01	0.10
3,4-DIMETHYLCUMENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,3,5-TETRAMETHYLBENZENE	0.1	0.01	0.9	0.0	0.00	0.0	0.2	0.03	1.9	0.1	0.01	0.70
TERT-1-BUT-2-METHYLBENZENE	0.1	0.01	0.7	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.14
1,2,3,4-TETRAMETHYLBENZENE	0.1	0.01	1.3	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.26
N-PENT-BENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TERT-1-BUT-3,5-DIMETHYLBENZENE	0.1	0.01	0.9	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.18
TERT-1-BUTYL-4-ETHYLBENZENE	0.4	0.03	2.5	0.0	0.00	0.0	0.2	0.03	1.4	0.2	0.03	0.90
NAPHTHALENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
DODECANE	0.7	0.05	0.3	0.0	0.00	0.0	0.1	0.01	0.0	0.2	0.03	0.06
1,3,5-TRIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,4-TRIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEXYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNIDENTIFIED C9-C12+	19.4	1.41	74.1	0.2	0.18	0.7	4.9	0.66	18.6	5.5	1.01	20.78
FORMALDEHYDE	8.1	0.59	58.0	0.2	0.15	1.1	1.5	0.20	10.6	2.2	0.40	15.48
ACETALDEHYDE	3.2	0.23	17.7	0.1	0.07	0.4	1.6	0.22	8.9	1.1	0.21	6.33
ACROLEIN	0.4	0.03	2.7	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.01	0.55
ACETONE	2.4	0.17	1.3	0.0	0.00	0.0	1.4	0.19	0.8	0.9	0.16	0.49
PROPIONALDEHYDE	1.8	0.13	11.7	0.0	0.00	0.0	0.4	0.06	2.9	0.5	0.09	3.23
CROTONALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.2	0.03	1.1	0.1	0.01	0.29
ISOBUTYRALDEHYDE	0.4	0.03	2.2	0.1	0.10	0.5	0.8	0.10	4.0	0.3	0.06	1.83
METHYL ETHYL KETONE	0.4	0.03	0.5	0.1	0.10	0.1	0.8	0.10	0.9	0.3	0.06	0.41
BENZALDEHYDE	2.0	0.15	-1.1	0.0	0.00	0.0	0.3	0.03	-0.1	0.5	0.09	-0.27
HEXANALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00



TEST NUMBER: G72031FTP10K  
 TEST CAR: FORD F150 P/U #31  
 TEST DATE 8/28/96  
 TEST FUEL: EEE

COMPOUND	BAG 1	BAG 1	BAG 1	BAG 2	BAG 2	BAG 2	BAG 3	BAG 3	BAG 3	FTP		
	MG/MI	WEIGHT NMOG %	OZONE MG/MI	MG/MI	WEIGHT NMOG %	OZONE MG/MI	MG/MI	WEIGHT NMOG %	OZONE MG/MI	MG/MI	WEIGHT NMOG %	OZONE MG/MI
METHANE	154.6		2.3	152.8		2.3	110.6		1.6	141.6		2.10
ETHANE	26.2	2.14	6.6	27.6	36.85	6.9	24.8	7.17	6.2	26.6	6.85	6.64
ETHYLENE	73.9	6.03	538.6	1.1	1.51	8.3	17.9	5.18	130.6	20.8	5.37	151.83
PROPANE	1.9	0.16	0.9	1.3	1.73	0.6	1.0	0.29	0.5	1.3	0.35	0.65
PROPYLENE	45.3	3.70	425.8	0.4	0.56	4.0	10.4	3.00	97.5	12.5	3.21	117.10
ACETYLENE	8.2	0.67	4.1	0.0	0.01	0.0	0.0	0.00	0.0	1.7	0.44	0.85
PROPADIENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
BUTANE	15.1	1.23	15.4	4.7	6.22	4.8	7.6	2.18	7.7	7.6	1.97	7.78
TRANS-2-BUTENE	6.1	0.50	61.1	0.1	0.13	1.0	3.8	1.10	38.0	2.4	0.61	23.59
1-BUTENE	7.4	0.60	65.9	0.0	0.00	0.0	1.3	0.39	12.0	1.9	0.49	16.95
2-METHYLPROPENE (ISOBUTYLENE)	32.3	2.64	171.6	0.3	0.34	1.3	7.3	2.11	38.8	8.8	2.28	46.92
2,2-DIMETHYLPROPANE (NEOPENTANE)	0.3	0.02	0.1	0.2	0.29	0.1	0.2	0.06	0.1	0.2	0.06	0.08
PROPENE	0.9	0.08	3.9	0.0	0.00	0.0	0.0	0.00	0.0	0.2	0.05	0.80
1,3-BUTADIENE	1.4	0.11	15.3	0.0	0.00	0.0	0.0	0.00	0.0	0.3	0.07	3.17
2-METHYLPROPANE (ISOBUTANE)	16.9	1.38	20.5	4.2	5.53	5.0	8.6	2.47	10.3	8.0	2.07	9.71
1-BUTYNE	2.1	0.17	19.8	0.3	0.35	2.5	0.5	0.15	4.9	0.7	0.19	6.69
METHANOL	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-BUTENE	9.4	0.78	93.1	0.0	0.00	0.0	2.7	0.77	26.5	2.7	0.69	26.56
3-METHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHANOL	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLBUTANE (ISOPENTANE)	102.0	8.32	140.7	8.7	11.50	12.0	38.4	11.09	53.0	36.2	9.32	49.92
2-BUTYNE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-PENTENE	0.8	0.07	5.2	0.4	0.49	2.3	0.1	0.03	0.6	0.4	0.10	2.44
2-METHYL-1-BUTENE	1.9	0.16	9.3	0.4	0.58	2.2	0.3	0.10	1.7	0.7	0.19	3.52
PENTANE	20.6	1.68	21.4	3.2	4.29	3.4	8.5	2.47	8.9	8.3	2.14	8.63
UNIDENTIFIED C5 OLEFINS	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-1,3-BUTADIENE	0.5	0.04	4.7	0.1	0.19	1.3	0.0	0.00	0.0	0.2	0.05	1.65
TRANS-2-PENTENE	0.8	0.06	6.9	0.0	0.00	0.0	0.4	0.11	3.4	0.3	0.07	2.38
3,3-DIMETHYL-1-BUTENE	0.2	0.02	0.9	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.18
CIS-2-PENTENE	0.6	0.05	5.3	0.0	0.00	0.0	0.2	0.05	1.5	0.2	0.04	1.50
2-METHYL-2-BUTENE	4.2	0.34	26.7	0.0	0.01	0.0	1.2	0.34	7.5	1.2	0.31	7.62
CYCLOPENTADIENE	0.8	0.06	5.8	0.0	0.00	0.0	0.0	0.00	0.0	0.2	0.04	1.21
2,2-DIMETHYLBUTANE	1.5	0.12	1.2	0.6	0.75	0.5	0.9	0.28	0.7	0.8	0.22	0.70
CYCLOPENTENE	1.5	0.12	11.3	0.0	0.00	0.0	0.3	0.10	2.5	0.4	0.10	3.05
4-METHYL-1-PENTENE	0.4	0.03	1.8	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02	0.37
3-METHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CYCLOPENTANE	1.9	0.15	4.4	0.0	0.00	0.0	0.7	0.20	1.6	0.6	0.15	1.37
2,3-DIMETHYLBUTANE	5.6	0.46	6.0	0.2	0.25	0.2	1.8	0.52	1.9	1.8	0.45	1.87
MTBE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-METHYL-CIS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLPENTANE	7.9	0.65	12.1	0.2	0.21	0.2	2.6	0.75	4.0	2.4	0.63	3.74
4-METHYL-TRANS-2-PENTENE	1.3	0.10	8.6	0.0	0.00	0.0	0.0	0.00	0.0	0.3	0.07	1.78
3-METHYLPENTANE	4.3	0.35	8.6	1.2	1.58	1.8	1.3	0.38	2.0	1.9	0.48	2.84
2-METHYL-1-PENTENE	0.2	0.01	0.7	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.14
1-HEXENE	0.4	0.03	1.6	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02	0.34
HEXANE	6.0	0.49	5.9	0.2	0.24	0.2	2.1	0.60	2.0	1.9	0.49	1.88
UNIDENTIFIED C8 OLEFINS	0.1	0.01	0.4	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-3-HEXENE	0.2	0.01	1.1	0.0	0.00	0.0	0.1	0.03	0.7	0.1	0.02	0.42
CIS-3-HEXENE	0.3	0.03	2.3	0.0	0.00	0.0	0.1	0.04	0.9	0.1	0.03	0.73
TRANS-2-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-TRANS-2-PENTENE	0.5	0.04	3.5	0.0	0.00	0.0	0.2	0.05	1.2	0.2	0.04	1.05
2-METHYL-2-PENTENE	0.6	0.05	3.8	0.0	0.00	0.0	0.1	0.03	0.7	0.1	0.04	0.98
3-METHYLCYCLOPENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-HEXENE	0.4	0.03	2.5	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02	0.51
ETBE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-CIS-2-PENTENE	0.4	0.03	2.8	0.0	0.00	0.0	0.2	0.05	1.1	0.1	0.03	0.89
2,2-DIMETHYLPENTANE	2.1	0.17	2.9	0.0	0.00	0.0	0.6	0.16	0.8	0.6	0.15	0.82
METHYLCYCLOPENTANE	2.0	0.17	5.7	0.0	0.00	0.0	0.6	0.16	1.6	0.6	0.15	1.61
2,4-DIMETHYLPENTANE	5.3	0.43	9.4	0.0	0.01	0.0	1.8	0.52	3.2	1.6	0.41	2.85
2,3,3-TRIMETHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,3-TRIMETHYLBUTANE	0.4	0.03	0.6	0.2	0.21	0.2	0.1	0.04	0.2	0.2	0.05	0.28
3,4-DIMETHYL-1-PENTENE	0.3	0.02	0.9	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.01	0.20
1-METHYLCYCLOPENTENE	0.5	0.04	2.9	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.03	0.61
BENZENE	73.8	6.02	31.0	5.0	6.58	2.1	22.9	6.61	9.6	24.2	6.22	10.15
3-METHYL-1-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,3-DIMETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.3	0.08	0.2	0.1	0.02	0.05
CYCLOHEXANE	4.6	0.38	5.9	0.0	0.00	0.0	1.3	0.39	1.7	1.3	0.34	1.69
2-METHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYLPENTANE	2.5	0.20	3.7	0.0	0.00	0.0	0.8	0.23	1.2	0.7	0.19	1.10
1,1-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CYCLOHEXENE	0.2	0.01	1.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.21

3-METHYLHEXANE	1.3	0.11	1.9	0.0	0.00	0.0	0.4	0.12	0.6	0.4	0.10	0.54
CIS-1,3-DIMETHYLCYCLOPENTANE	0.3	0.03	0.9	0.0	0.00	0.0	0.1	0.03	0.3	0.1	0.03	0.25
3-ETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,2-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,3-DIMETHYLCYCLOPENTANE	0.3	0.02	0.7	0.0	0.00	0.0	0.1	0.03	0.2	0.1	0.02	0.21
1-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,4-TRIMETHYLPENTANE	94.9	7.75	88.3	4.5	5.93	4.2	38.0	10.97	35.3	32.4	8.36	30.16
2-METHYL-1-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-3-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEPTANE	1.4	0.12	1.2	0.0	0.00	0.0	0.5	0.15	0.4	0.4	0.11	0.36
CIS-3-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNIDENTIFIED C7	2.9	0.24	13.2	0.0	0.00	0.0	0.7	0.21	3.3	0.8	0.21	3.65
2-METHYL-2-HEXENE	0.2	0.01	0.9	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.19
3-METHYL-TRANS-3-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-ETHYL-CIS-2-PENTENE	0.2	0.02	1.2	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.25
2,4,4-TRIMETHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,4-TRIMETHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYL-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-HEPTENE	0.3	0.03	1.7	0.0	0.00	0.0	0.1	0.03	0.5	0.1	0.02	0.51
METHYLCYCLOHEXANE	2.1	0.17	3.9	0.0	0.00	0.0	0.8	0.18	1.2	0.6	0.18	1.12
CIS-1,2-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,1,3-TRIMETHYLCYCLOPENTANE	0.2	0.01	0.4	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.07
2,4,4-TRIMETHYL-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,3-TRIMETHYLPENTANE	12.3	1.00	14.8	0.4	0.49	0.4	4.0	1.17	4.8	3.8	0.99	4.62
2,5-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLHEXANE	15.9	1.30	23.8	0.4	0.53	0.6	5.1	1.49	7.7	4.9	1.27	7.37
1-TRANS-2-CIS-4-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,3-DIMETHYLHEXANE	0.3	0.02	0.3	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02	0.07
1-TRANS-2-CIS-3-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3,4-TRIMETHYLPENTANE	18.5	1.51	29.8	0.4	0.59	0.7	6.4	1.84	10.2	5.8	1.50	9.30
2,3,3-TRIMETHYLPENTANE	28.7	2.34	34.4	0.7	0.98	0.9	9.2	2.65	11.0	8.8	2.28	10.61
TOLUENE	301.9	24.64	824.2	0.0	0.00	0.0	62.1	17.95	169.6	79.7	20.52	217.45
2,3-DIMETHYLHEXANE	13.6	1.11	18.0	0.0	0.00	0.0	2.2	0.65	3.0	3.4	0.89	4.54
1,1,2-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLHEPTANE	1.8	0.14	1.7	0.0	0.00	0.0	0.6	0.17	0.6	0.5	0.14	0.51
3,4-DIMETHYLHEXANE	2.1	0.17	2.6	0.0	0.00	0.0	0.7	0.21	0.9	0.6	0.16	0.76
2,2,4,4-TETRAMETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-AND-TRANS-3,4-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-METHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-3-ETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-3-ETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYLHEPTANE	0.7	0.06	0.7	0.0	0.00	0.0	0.3	0.08	0.3	0.2	0.06	0.22
1-CIS-2-TRANS-3-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1,3-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,4-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-ETHYLHEXANE	0.1	0.01	0.1	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.02
2,2,5-TRIMETHYLHEXANE	8.5	0.70	8.3	0.3	0.37	0.3	2.8	0.80	2.7	2.7	0.69	2.59
TRANS-1-METHYL-3-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1-METHYL-3-ETHYLCYCLOPENTANE	0.2	0.01	0.3	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.07
1,1-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1-METHYL-2-ETHYLCYCLOPENTANE	0.3	0.02	0.6	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02	0.12
1-METHYL-1-ETHYL-CYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4,4-TRIMETHYLHEXANE	0.4	0.03	0.5	0.0	0.00	0.0	0.1	0.04	0.1	0.1	0.03	0.14
2,2,4-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,2-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-4-OCTENE	0.2	0.01	1.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.20
OCTANE	0.5	0.04	0.3	0.0	0.00	0.0	0.1	0.04	0.1	0.1	0.04	0.09
UNIDENTIFIED C8	1.9	0.15	8.4	0.0	0.00	0.0	0.1	0.04	0.5	0.4	0.11	1.45
TRANS-2-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,3-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1,4-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ISOPROPYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3,5-TRIMETHYLHEXANE	1.1	0.09	1.3	0.0	0.00	0.0	0.4	0.12	0.5	0.3	0.09	0.39
CIS-1-METHYL-2-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-2-ETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLHEPTANE	0.7	0.06	0.9	2.5	3.29	3.3	1.5	0.44	2.0	1.8	0.48	2.47
4,4-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1,2-DIMETHYLCYCLOHEXANE	0.1	0.01	0.3	0.0	0.00	0.0	0.0	0.01	0.1	0.0	0.01	0.09
PROPYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
PROPYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-4-ETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,6-DIMETHYLHEPTANE	0.2	0.01	0.2	0.0	0.00	0.0	0.1	0.01	0.1	0.0	0.01	0.05
1,1,3-TRIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,5-DIMETHYLHEPTANE	0.3	0.02	0.3	0.0	0.00	0.0	0.1	0.02	0.1	0.1	0.02	0.09
3,3-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00

3,5-DIMETHYLHEPTANE	0.3	0.02	0.3	0.0	0.00	0.0	0.1	0.02	0.1	0.1	0.02	0.09
ETHYLBENZENE	9.2	0.75	24.9	0.0	0.04	0.1	2.6	0.74	6.9	2.6	0.68	7.10
2,3,4-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
m- & p-XYLENE	11.7	0.96	86.7	0.0	0.00	0.0	4.5	1.30	33.1	3.7	0.94	27.07
4-METHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,4-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-ETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLOCTANE	0.3	0.02	0.3	0.0	0.00	0.0	0.1	0.03	0.1	0.1	0.02	0.10
3-METHYLOCTANE	0.2	0.01	0.2	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.04
STYRENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
o-XYLENE	6.2	0.51	40.3	0.0	0.00	0.0	2.1	0.62	13.8	1.9	0.48	12.14
1-NONENE	0.5	0.04	1.0	0.0	0.00	0.0	0.1	0.04	0.3	0.1	0.04	0.30
TRANS-3-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-3-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
NONANE	0.4	0.03	0.2	0.0	0.00	0.0	0.2	0.04	0.1	0.1	0.03	0.07
TRANS-2-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ISOPROPYLBENZENE (CUMENE)	1.4	0.11	3.1	0.0	0.00	0.0	0.2	0.07	0.5	0.3	0.09	0.78
2,2-DIMETHYLOCTANE	0.3	0.03	0.3	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02	0.07
2,4-DIMETHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
n-PROPYLBENZENE	5.6	0.45	11.8	0.1	0.15	0.2	0.8	0.22	1.6	1.4	0.37	3.01
1-METHYL-3-ETHYLBENZENE	26.2	2.14	189.0	0.3	0.34	1.9	4.4	1.27	31.7	6.8	1.75	48.84
1-METHYL-4-ETHYLBENZENE	11.5	0.94	82.8	0.0	0.00	0.0	2.0	0.57	14.2	2.9	0.75	21.07
1,3,5-TRIMETHYLBENZENE	12.5	1.02	126.9	0.0	0.00	0.0	2.0	0.56	19.7	3.1	0.81	31.73
1-METHYL-2-ETHYLBENZENE	9.7	0.79	69.8	0.1	0.12	0.6	1.8	0.46	11.5	2.5	0.64	17.94
1,2,4-TRIMETHYLBENZENE	37.7	3.08	332.7	1.2	1.64	10.9	4.9	1.43	43.6	9.8	2.53	86.82
TERT-BUTYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-DECENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
DECANE	0.3	0.02	0.1	0.8	1.05	0.4	0.5	0.15	0.2	0.6	0.16	0.29
ISOBUTYLBENZENE	0.3	0.02	0.5	0.7	0.99	1.4	0.5	0.14	0.9	0.6	0.15	1.08
METHYLPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
BUTYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-DIMETHYL-5-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
S-BUTYLBENZENE	0.6	0.05	1.1	0.0	0.00	0.0	0.2	0.06	0.4	0.2	0.05	0.35
1-METHYL-3-ISOPROPYLBENZENE	8.2	0.50	38.1	0.0	0.00	0.0	0.8	0.24	4.8	1.5	0.39	8.81
1,2,3-TRIMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-4-ISOPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
INDAN	4.3	0.35	4.5	0.0	0.00	0.0	0.3	0.07	0.3	1.0	0.25	1.01
1-METHYL-2-ISOPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-DIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,4-DIETHYLBENZENE	2.3	0.19	14.8	0.0	0.00	0.0	0.4	0.12	2.7	0.6	0.15	3.81
1-METHYL-3-N-PROPYLBENZENE	1.8	0.15	11.8	0.0	0.00	0.0	0.2	0.07	1.5	0.4	0.11	2.85
1-METHYL-4-N-PROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2-DIETHYLBENZENE	2.7	0.22	17.7	0.0	0.00	0.0	0.4	0.12	2.8	0.7	0.18	4.43
1-METHYL-2-N-PROPYLBENZENE	1.2	0.10	8.0	0.0	0.00	0.0	0.3	0.10	2.1	0.3	0.09	2.24
1,4-DIMETHYL-2-ETHYLBENZENE	1.0	0.08	9.1	0.0	0.00	0.0	0.0	0.00	0.0	0.2	0.06	1.88
1,3-DIMETHYL-4-ETHYLBENZENE	1.2	0.09	10.5	0.0	0.00	0.0	0.2	0.05	1.6	0.3	0.07	2.61
1,2-DIMETHYL-4-ETHYLBENZENE	1.6	0.13	14.2	0.0	0.00	0.0	0.0	0.00	0.0	0.3	0.08	2.95
1,3-DIMETHYL-2-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNDECANE	1.5	0.12	0.6	0.0	0.00	0.0	0.0	0.00	0.0	0.3	0.08	0.13
1,2-DIMETHYL-3-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,4,5-TETRAMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLBUTYLBENZENE (sec AMYLBENZENE)	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,4-DIMETHYLCUMENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,3,5-TETRAMETHYLBENZENE	0.3	0.03	2.9	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02	0.59
TERT-1-BUT-2-METHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,3,4-TETRAMETHYLBENZENE	0.3	0.02	2.3	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.01	0.48
N-PENT-BENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TERT-1-BUT-3,5-DIMETHYLBENZENE	0.3	0.02	2.2	0.8	1.00	5.7	0.3	0.10	2.6	0.5	0.14	4.10
TERT-1-BUTYL-4-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
NAPHTHALENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
DODECANE	0.8	0.06	0.3	0.0	0.00	0.0	0.0	0.00	0.0	0.2	0.04	0.08
1,3,5-TRIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,4-TRIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEXYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNIDENTIFIED C9-C12+	18.1	1.48	68.9	0.4	0.58	1.7	1.5	0.44	5.8	4.4	1.13	16.75
FORMALDEHYDE	13.0	1.06	93.2	0.8	0.83	4.5	1.5	0.44	10.8	3.4	0.89	24.60
ACETALDEHYDE	4.9	0.40	27.1	0.0	0.00	0.0	0.9	0.25	4.8	1.3	0.32	6.92
ACROLEIN	1.4	0.12	9.8	0.2	0.28	1.4	0.0	0.00	0.0	0.4	0.11	2.76
ACETONE	3.8	0.31	2.2	0.2	0.21	0.1	1.3	0.36	0.7	1.2	0.32	0.68
PROPIONALDEHYDE	1.0	0.08	6.7	0.3	0.38	1.9	0.1	0.02	0.4	0.4	0.10	2.46
CROTONALDEHYDE	0.3	0.02	1.4	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.01	0.28
ISOBUTYRALDEHYDE	0.2	0.02	1.0	0.0	0.00	0.0	0.0	0.01	0.1	0.0	0.01	0.25
METHYL ETHYL KETONE	0.2	0.02	0.2	0.0	0.00	0.0	0.0	0.01	0.0	0.0	0.01	0.06
BENZALDEHYDE	2.6	0.22	-1.5	0.0	0.00	0.0	0.7	0.19	-0.4	0.7	0.19	-0.40
HEXANALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00



TEST NUMBER: G72031FTP20K  
 TEST CAR: 1995 F150 PICKUP #31  
 TEST DATE: 7/30/97  
 TEST FUEL: EEE

COMPOUND	BAG 1		BAG 1		BAG 2		BAG 2		BAG 3		BAG 3		FTP		FTP	
	MG/M	WT OZONE, NMOG %	MG/M	WT OZONE, NMOG %	MG/M	WT OZONE, NMOG %	MG/M	WT OZONE, NMOG %	MG/M	WT OZONE, NMOG %	MG/M	WT OZONE, NMOG %	MG/M	WT OZONE, NMOG %	MG/M	WT OZONE, NMOG %
METHANE	135.6		2.0		110.7		1.6		93.9		1.4		111.3		1.65	
ETHANE	22.1	2.29	5.5	13.6	32.53	3.4	18.0	5.82	4.5	16.5	5.41	4.14				
ETHYLENE	55.2	5.73	402.5	0.4	0.88	2.7	15.8	5.11	115.4	15.9	5.21	116.22				
PROPANE	1.2	0.13	0.6	0.4	0.98	0.2	0.9	0.30	0.4	0.7	0.24	0.35				
PROPYLENE	30.6	3.18	287.7	0.1	0.25	1.0	7.8	2.51	73.2	8.5	2.78	80.03				
ACETYLENE	11.4	1.19	5.7	0.0	0.00	0.0	0.0	0.00	0.0	2.4	0.77	1.18				
PROPADIENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00				
BUTANE	11.1	1.15	11.3	2.1	5.14	2.2	6.4	2.07	6.5	5.2	1.69	5.27				
TRANS-2-BUTENE	3.9	0.40	38.5	0.0	0.00	0.0	2.2	0.72	22.0	1.4	0.46	13.99				
1-BUTENE	5.2	0.54	48.5	0.0	0.00	0.0	1.0	0.33	9.0	1.4	0.44	12.09				
2-METHYLPROPENE (ISOBUTYLENE)	27.8	2.88	147.5	0.3	0.77	1.7	7.1	2.28	37.8	7.8	2.57	41.68				
2,2-DIMETHYLPROPANE (NEOPENTANE)	0.2	0.02	0.1	0.1	0.24	0.0	0.1	0.04	0.1	0.1	0.04	0.06				
PROPYLENE	0.9	0.09	3.7	0.0	0.00	0.0	0.0	0.00	0.0	0.2	0.08	0.76				
1,3-BUTADIENE	1.5	0.15	16.2	0.0	0.00	0.0	0.0	0.00	0.0	0.3	0.10	3.34				
2-METHYLPROPANE (ISOBUTANE)	10.7	1.11	13.0	1.9	4.44	2.2	6.6	2.12	8.0	5.0	1.63	6.03				
1-BUTYNE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00				
METHANOL	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00				
CIS-2-BUTENE	5.9	0.82	58.9	0.0	0.00	0.0	2.0	0.84	19.8	1.8	0.58	17.62				
3-METHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00				
ETHANOL	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00				
2-METHYLBUTANE (ISOPENTANE)	86.1	8.84	117.5	7.4	17.83	10.1	40.7	13.14	56.2	32.6	10.65	44.96				
2-BUTYNE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00				
1-PENTENE	1.3	0.13	8.0	0.2	0.42	1.1	0.1	0.04	0.8	0.4	0.13	2.44				
2-METHYL-1-BUTENE	2.0	0.21	9.9	0.0	0.00	0.0	0.3	0.11	1.7	0.5	0.17	2.52				
PENTANE	16.2	1.68	16.9	1.6	3.81	1.7	7.8	2.44	7.9	8.3	2.04	8.50				
UNIDENTIFIED C5 OLEFINS	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00				
2-METHYL-1,3-BUTADIENE	0.6	0.06	5.5	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.04	1.13				
TRANS-2-PENTENE	0.7	0.08	6.5	0.0	0.00	0.0	0.3	0.10	2.8	0.2	0.08	2.09				
3,3-DIMETHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00				
CIS-2-PENTENE	0.6	0.06	5.2	0.0	0.00	0.0	0.1	0.03	0.9	0.1	0.05	1.32				
2-METHYL-2-BUTENE	4.3	0.45	27.5	0.0	0.00	0.0	1.5	0.48	9.5	1.3	0.42	8.30				
TERT-BUTANOL	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00				
CYCLOPENTADIENE	0.5	0.05	3.6	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.03	0.75				
2,2-DIMETHYLBUTANE	1.5	0.16	1.2	0.3	0.74	0.3	0.8	0.27	0.7	0.7	0.23	0.57				
CYCLOPENTENE	1.3	0.13	9.8	0.0	0.00	0.0	0.3	0.11	2.6	0.4	0.12	2.73				
4-METHYL-1-PENTENE	0.5	0.05	2.0	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.03	0.42				
3-METHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00				
CYCLOPENTANE	1.2	0.13	2.9	0.0	0.00	0.0	0.5	0.17	1.2	0.4	0.13	0.94				
2,3-DIMETHYLBUTANE	6.2	0.64	6.6	0.4	1.06	0.5	2.5	0.82	2.7	2.2	0.72	2.35				
MTBE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00				
4-METHYL-CIS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00				
2-METHYLPENTANE	8.8	0.92	13.5	0.5	1.17	0.7	3.6	1.15	5.5	3.1	1.00	4.68				
4-METHYL-TRANS-2-PENTENE	0.3	0.03	2.1	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02	0.44				
3-METHYLPENTANE	5.2	0.54	7.9	0.2	0.44	0.3	1.7	0.56	2.6	1.6	0.54	2.50				
2-METHYL-1-PENTENE	0.2	0.02	0.8	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.16				
1-HEXENE	0.5	0.05	2.3	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.04	0.48				
HEXANE	5.4	0.56	5.3	0.3	0.73	0.3	2.1	0.68	2.0	1.8	0.60	1.81				
UNIDENTIFIED C6 OLEFINS	1.2	0.13	8.1	0.0	0.00	0.0	0.0	0.00	0.0	0.3	0.08	1.68				
TRANS-3-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00				
CIS-3-HEXENE	0.2	0.02	1.2	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.26				
DI-ISOPROPYL ETHER	0.3	0.03	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02	0.00				
TRANS-2-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.05	1.0	0.0	0.01	0.28				
3-METHYL-TRANS-2-PENTENE	0.3	0.03	2.1	0.0	0.00	0.0	0.2	0.05	1.1	0.1	0.04	0.72				
2-METHYL-2-PENTENE	0.6	0.06	4.0	0.0	0.00	0.0	0.1	0.04	0.9	0.2	0.05	1.06				
3-METHYLCYCLOPENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00				
CIS-2-HEXENE	0.4	0.04	2.4	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02	0.49				
ETBE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00				
3-METHYL-CIS-2-PENTENE	0.3	0.03	2.1	0.1	0.16	0.4	0.0	0.02	0.3	0.1	0.04	0.75				
2,2-DIMETHYLPENTANE, NOTE A	4.4	0.46	6.2	0.0	0.00	0.0	0.8	0.27	1.2	1.1	0.37	1.59				
METHYLCYCLOPENTANE, NOTE A	0.6	0.07	1.8	0.0	0.00	0.0	0.8	0.26	2.3	0.4	0.12	1.00				
2,4-DIMETHYLPENTANE	5.8	0.61	10.4	0.4	0.91	0.7	2.2	0.72	4.0	2.0	0.66	3.58				
2,2,3-TRIMETHYLBUTANE	0.4	0.04	0.5	0.0	0.00	0.0	0.2	0.06	0.2	0.1	0.04	0.18				
3,4-DIMETHYL-1-PENTENE	0.1	0.01	0.5	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.10				
1-METHYLCYCLOPENTENE	0.2	0.02	1.1	0.0	0.00	0.0	0.1	0.02	0.4	0.1	0.02	0.34				
BENZENE	34.6	3.59	14.5	1.7	4.16	0.7	12.1	3.91	5.1	11.4	3.72	4.77				
3-METHYL-1-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00				
3,3-DIMETHYLPENTANE	0.3	0.03	0.2	0.1	0.23	0.1	0.0	0.01	0.0	0.1	0.04	0.08				
CYCLOHEXANE	2.8	0.29	3.6	0.0	0.00	0.0	1.1	0.34	1.4	0.9	0.29	1.12				
2-METHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00				
2,3-DIMETHYLPENTANE	5.0	0.52	7.6	0.1	0.21	0.1	1.8	0.57	2.7	1.6	0.51	2.38				
1,1-DIMETHYLCYCLOPENTANE	0.2	0.02	0.3	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.07				
TERT-AMYL METHYL ETHER	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00				
CYCLOHEXENE	0.2	0.02	1.1	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.22				

3-METHYLHEXANE	1.5	0.15	2.0	0.0	0.00	0.0	0.6	0.18	0.8	0.5	0.15	0.63
CIS-1,3-DIMETHYLCYCLOPENTANE	0.3	0.03	0.8	0.0	0.00	0.0	0.1	0.04	0.3	0.1	0.03	0.25
3-ETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,2-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,3-DIMETHYLCYCLOPENTANE	0.3	0.03	0.6	0.0	0.00	0.0	0.1	0.03	0.2	0.1	0.03	0.20
1-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,4-TRIMETHYLPENTANE	115.6	12.00	107.5	4.8	11.50	4.5	47.2	15.21	43.9	39.3	12.86	36.56
2-METHYL-1-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-3-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEPTANE	1.7	0.18	1.4	0.0	0.00	0.0	0.6	0.18	0.5	0.5	0.18	0.41
CIS-3-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNIDENTIFIED C7	0.3	0.03	1.4	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02	0.29
2-METHYL-2-HEXENE	0.1	0.01	0.6	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.13
3-METHYL-TRANS-3-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-ETHYL-CIS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4,4-TRIMETHYL-1-PENTENE	0.2	0.02	0.4	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.09
2,3-DIMETHYL-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-HEPTENE	0.3	0.03	1.6	0.0	0.00	0.0	0.1	0.04	0.7	0.1	0.03	0.52
METHYLCYCLOHEXANE	2.5	0.26	4.6	0.0	0.00	0.0	0.8	0.26	1.5	0.7	0.24	1.35
CIS-1,2-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,1,3-TRIMETHYLCYCLOPENTANE	0.2	0.02	0.3	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.07
2,4,4-TRIMETHYL-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,3-TRIMETHYLPENTANE	11.5	1.19	13.7	0.3	0.75	0.4	3.8	1.21	4.5	3.6	1.16	4.27
2,5-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLHEXANE	11.3	1.17	17.0	0.4	1.02	0.6	4.3	1.38	6.4	3.7	1.22	5.60
1-TRANS-2-CIS-4-TRIMETHYLCYCLOPENTANE	0.2	0.02	0.3	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.06
3,3-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-TRANS-2-CIS-3-TRIMETHYLCYCLOPENTANE	0.1	0.01	0.2	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.05
2,3,4-TRIMETHYLPENTANE	21.3	2.21	34.1	0.6	1.42	0.9	7.9	2.53	12.6	6.9	2.24	10.98
2,3,3-TRIMETHYLPENTANE	24.0	2.49	28.8	0.7	1.64	0.8	9.6	3.11	11.6	8.0	2.60	9.56
TOLUENE	220.2	22.85	601.0	0.0	0.00	0.0	56.1	18.09	153.1	60.9	19.91	166.21
2,3-DIMETHYLHEXANE	11.9	1.23	15.7	0.0	0.00	0.0	2.8	0.89	3.6	3.2	1.05	4.24
1,1,2-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLHEPTANE	1.0	0.10	0.9	0.0	0.00	0.0	0.4	0.12	0.4	0.3	0.10	0.29
3,4-DIMETHYLHEXANE, NOTE B	1.9	0.19	2.5	0.0	0.00	0.0	0.6	0.19	0.8	0.5	0.18	0.74
4-METHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYLHEPTANE	0.7	0.08	0.7	0.0	0.00	0.0	0.4	0.12	0.4	0.3	0.08	0.25
1-CIS-2-TRANS-3-TRIMETHYLCYCLOPENTANE	0.3	0.03	0.5	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02	0.10
CIS-1,3-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,4-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-ETHYLHEXANE	0.4	0.05	0.5	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.03	0.11
2,2,5-TRIMETHYLHEXANE	8.2	0.85	7.9	0.2	0.58	0.2	2.7	0.86	2.6	2.5	0.83	2.47
TRANS-1-METHYL-3-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1-METHYL-3-ETHYLCYCLOPENTANE	0.3	0.03	0.6	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02	0.13
1,1-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1-METHYL-2-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-1-ETHYL-CYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4,4-TRIMETHYLHEXANE	0.4	0.05	0.5	0.0	0.00	0.0	0.1	0.04	0.1	0.1	0.04	0.14
2,2,4-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,2-DIMETHYLCYCLOHEXANE	0.3	0.03	0.5	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02	0.10
1-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-4-OCTENE	0.5	0.05	2.7	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.03	0.56
OCTANE	0.6	0.06	0.4	0.0	0.00	0.0	0.2	0.08	0.1	0.2	0.06	0.12
UNIDENTIFIED C8	0.3	0.03	1.0	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02	0.20
TRANS-2-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,3-DIMETHYLCYCLOHEXANE, NOTE C	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ISOPROPYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3,5-TRIMETHYLHEXANE	1.0	0.10	1.1	0.0	0.00	0.0	0.3	0.10	0.4	0.3	0.10	0.34
CIS-1-METHYL-2-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLHEPTANE	0.2	0.02	0.2	0.5	1.18	0.7	0.0	0.00	0.0	0.3	0.10	0.39
4,4-DIMETHYLHEPTANE	0.5	0.05	0.5	0.3	0.66	0.3	0.5	0.17	0.6	0.4	0.13	0.44
CIS-1,2-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,6-DIMETHYLHEPTANE, NOTE D	0.4	0.04	0.4	0.0	0.00	0.0	0.1	0.04	0.1	0.1	0.03	0.12
1,1,3-TRIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,5-DIMETHYLHEPTANE, NOTE E	0.5	0.05	0.5	0.0	0.00	0.0	0.1	0.04	0.1	0.1	0.04	0.15
3,3-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,5-DIMETHYLHEPTANE, NOTE E	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHYLBENZENE	7.5	0.78	20.3	0.0	0.00	0.0	2.1	0.66	5.6	2.1	0.69	5.72
2,3,4-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
m-&p-XYLENE	7.9	0.82	58.1	0.0	0.00	0.0	2.9	0.92	21.1	2.4	0.79	17.79
4-METHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,4-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-ETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLOCTANE	0.2	0.02	0.2	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.05
3-METHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00

STYRENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.00	0.00	0.00
o-XYLENE	4.1	0.43	26.8	0.0	0.00	0.0	1.6	0.51	10.1	1.3	0.42	8.31
1-NONENE	0.3	0.03	0.7	0.0	0.00	0.0	0.1	0.03	0.2	0.1	0.03	0.21
TRANS-3-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-3-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
NONANE	0.3	0.03	0.2	0.0	0.00	0.0	0.1	0.03	0.1	0.1	0.03	0.05
TRANS-2-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ISOPROPYLBENZENE (CUMENE)	0.2	0.02	0.5	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.10
2,2-DIMETHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
n-PROPYLBENZENE	3.8	0.39	8.0	0.0	0.00	0.0	0.4	0.14	0.9	0.9	0.29	1.91
1-METHYL-3-ETHYLBENZENE	17.2	1.79	124.2	0.3	0.67	2.0	3.0	0.95	21.3	4.5	1.48	32.56
1-METHYL-4-ETHYLBENZENE	7.9	0.82	56.6	0.0	0.00	0.0	1.2	0.38	8.5	1.9	0.64	14.02
1,3,5-TRIMETHYLBENZENE	8.9	0.92	89.7	0.2	0.48	2.0	1.8	0.52	16.2	2.4	0.78	24.04
1-METHYL-2-ETHYLBENZENE	6.9	0.71	49.4	0.0	0.00	0.0	1.1	0.37	8.2	1.7	0.57	12.44
1,2,4-TRIMETHYLBENZENE	27.3	2.83	241.1	0.5	1.14	4.2	2.0	0.64	17.5	6.4	2.10	56.81
TERT-BUTYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-DECENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
DECANE, NOTE F	0.2	0.02	0.1	0.2	0.43	0.1	0.0	0.00	0.0	0.1	0.04	0.06
ISOBUTYLBENZENE, NOTE F	0.2	0.02	0.4	0.2	0.40	0.3	0.0	0.00	0.0	0.1	0.04	0.24
1,3-DIMETHYL-5-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
METHYLPROPYLBENZENE (sec butylbenzene)	0.2	0.02	0.5	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.02	0.09
1-METHYL-3-ISOPROPYLBENZENE	5.3	0.55	31.1	0.0	0.00	0.0	0.7	0.22	4.0	1.3	0.42	7.53
1,2,3-TRIMETHYLBENZENE	0.6	0.06	4.9	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.04	1.02
1-METHYL-4-ISOPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
INDAN	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-2-ISOPROPYLBENZENE	0.4	0.04	2.2	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.03	0.48
1,3-DIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,4-DIETHYLBENZENE	0.5	0.05	2.9	0.0	0.00	0.0	0.2	0.07	1.4	0.2	0.05	0.99
1-METHYL-3-N-PROPYLBENZENE	1.2	0.13	8.0	0.0	0.00	0.0	0.0	0.00	0.0	0.3	0.08	1.65
1-METHYL-4-N-PROPYLBENZENE, NOTE G	0.2	0.02	1.3	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.27
1,2-DIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-2-N-PROPYLBENZENE	1.7	0.17	10.8	0.0	0.00	0.0	0.3	0.10	2.0	0.4	0.14	2.77
1,4-DIMETHYL-2-ETHYLBENZENE	0.5	0.06	4.9	0.0	0.00	0.0	0.2	0.05	1.5	0.2	0.05	1.43
1,3-DIMETHYL-4-ETHYLBENZENE	0.8	0.08	6.9	0.0	0.00	0.0	0.0	0.00	0.0	0.2	0.05	1.43
1,2-DIMETHYL-4-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-DIMETHYL-2-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNDECANE	0.1	0.01	0.1	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.01
1,2-DIMETHYL-3-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,4,5-TETRAMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLBUTYLBENZENE (sec AMYLBENZENE)	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,4-DIMETHYLCUMENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,3,5-TETRAMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TERT-1-BUT-2-METHYLBENZENE	0.1	0.01	0.6	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.13
1,2,3,4-TETRAMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
N-PENT-BENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TERT-1-BUT-3,5-DIMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TERT-1-BUTYL-4-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
NAPHTHALENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
DODECANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3,5-TRIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,4-TRIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEXYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNIDENTIFIED C9-C12+	16.6	1.73	63.3	0.0	0.00	0.0	0.0	0.00	0.0	3.4	1.12	13.09
FORMALDEHYDE	6.5	0.67	46.2	0.0	0.06	0.2	0.8	0.27	6.0	1.6	0.52	11.28
ACETALDEHYDE	2.2	0.23	12.4	0.0	0.00	0.0	0.5	0.17	2.9	0.8	0.20	3.36
ACROLEIN	1.0	0.11	6.9	0.0	0.00	0.0	0.5	0.15	3.2	0.3	0.11	2.31
ACETONE	1.5	0.15	0.8	0.1	0.25	0.1	0.7	0.22	0.4	0.5	0.18	0.31
PROPIONALDEHYDE	0.1	0.01	0.9	0.0	0.00	0.0	0.0	0.01	0.2	0.0	0.01	0.24
CROTONALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ISOBUTYRALDEHYDE, NOTE H	0.0	0.00	0.0	0.0	0.06	0.1	0.1	0.03	0.4	0.0	0.01	0.19
METHYL ETHYL KETONE, NOTE H	0.0	0.00	0.0	0.0	0.06	0.0	0.1	0.03	0.1	0.0	0.01	0.04
BENZALDEHYDE	2.1	0.22	-1.1	0.0	0.00	0.0	0.6	0.19	-0.3	0.6	0.19	-0.32
ISOVALERALDEHYDE	0.0	0.00	0.0	0.3	0.80	1.5	0.0	0.00	0.0	0.2	0.06	0.76
VALERALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
O-TOLUALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
M/P-TOLUALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEXANALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.2	0.05	0.8	0.0	0.01	0.17
DIMETHYLBENZALDEHYDE	0.1	0.01	-0.1	0.0	0.00	0.0	0.1	0.03	-0.0	0.1	0.02	-0.03

A - 2,2-Dimethylpentane and methylcyclopentane co-elute. GC peak area split equally between the two compounds.

B - 3-Methyl-3-ethylpentane co-elutes with reported compound. Not reported separately.

C - Cis-1,4-Dimethylcyclohexane co-elutes with reported compound. Not reported separately.

D - Propylcyclopentane co-elutes with reported compound. Not reported separately.

E - 2,5-Dimethylheptane and 3,5-dimethylheptane co-elute. GC peak area split equally between the two compounds.

F - Decane and isobutylbenzene co-elute. GC peak area split equally between the two compounds.

G - n-Butylbenzene co-elutes with reported compound. Not reported separately.

H - Isobutyraldehyde and methyl ethyl ketone co-elute. LC peak area split equally between the two compounds.

**APPENDIX D**  
**3-BAG CNG/GASOLINE TOTAL SPECIES AND**  
**COMPOSITE FTP TEST RESULTS**  
**ON VEHICLE NO. 72038**  
**AT 4,000- 10,000- AND 20,000-MILE INTERVALS**



TEST NUMBER: G72038FTP4K  
 TEST CAR: 1995 FORD F-150 PICKUP #38  
 TEST DATE: 12/13/95  
 TEST FUEL: CNG

#38

COMPOUND	BAG 1	BAG 1	BAG 1	BAG 2	BAG 2	BAG 2	BAG 3	BAG 3	BAG 3	FTP		FTP
	MG/MI	WEIGHT NMOG %	OZONE, MG/MI	MG/MI	WEIGHT NMOG %	OZONE MG/MI	MG/MI	WEIGHT NMOG %	OZONE MG/MI	MG/MI	WEIGHT NMOG %	OZONE MG/MI
METHANE	2159.2		32.0	2845.5		42.1	2139.2		31.7	2509.7		37.14
ETHANE	97.3	64.42	24.3	131.5	82.88	32.9	0.0	0.00	0.0	88.4	71.90	22.11
ETHYLENE	11.9	7.90	87.0	0.0	0.02	0.2	3.0	8.72	21.8	3.3	2.69	24.08
PROPANE	12.7	8.40	6.1	12.4	7.83	6.0	12.0	35.38	5.8	12.4	10.06	5.94
PROPYLENE	1.6	1.05	14.9	0.2	0.10	1.5	0.5	1.59	5.1	0.6	0.46	5.28
ACETYLENE	0.1	0.08	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.01
PROPADIENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
BUTANE	2.8	1.82	2.8	2.2	1.38	2.2	2.7	7.98	2.8	2.4	1.99	2.50
TRANS-2-BUTENE	0.2	0.13	1.9	0.0	0.00	0.0	0.3	0.91	3.1	0.1	0.10	1.23
1-BUTENE	0.3	0.18	2.4	0.0	0.00	0.0	0.1	0.34	1.0	0.1	0.07	0.78
2-METHYLPROPENE (ISOBUTYLENE)	0.4	0.28	2.2	0.0	0.00	0.0	0.3	0.89	1.8	0.2	0.14	0.90
2,2-DIMETHYLPROPANE (NEOPENTANE)	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
PROPYLE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-BUTADIENE	0.2	0.14	2.3	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.04	0.49
2-METHYLPROPANE (ISOBUTANE)	2.1	1.42	2.8	1.5	0.92	1.8	3.1	9.14	3.8	2.1	1.67	2.49
1-BUTYNE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
METHANOL	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-BUTENE	0.2	0.11	1.7	0.0	0.00	0.0	0.2	0.68	2.3	0.1	0.08	0.98
3-METHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHANOL	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLBUTANE (ISOPENTANE)	2.9	1.91	4.0	0.8	0.48	1.0	3.2	9.52	4.5	1.9	1.53	2.69
2-BUTYNE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
PENTANE	0.8	0.38	0.8	0.1	0.06	0.1	0.5	1.57	0.6	0.3	0.25	0.32
UNIDENTIFIED C5 OLEFINS	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-1,3-BUTADIENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,3-DIMETHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-2-BUTENE	0.3	0.19	1.8	0.4	0.25	2.5	0.3	0.77	1.7	0.3	0.27	2.16
CYCLOPENTADIENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLBUTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CYCLOPENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-METHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYLBUTANE	0.2	0.15	0.2	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.04	0.05
MTBE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-METHYL-CIS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLPENTANE	0.5	0.30	0.7	0.3	0.16	0.4	0.3	0.91	0.5	0.3	0.26	0.48
4-METHYL-TRANS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYLPENTANE	0.3	0.21	0.5	0.0	0.00	0.0	0.2	0.63	0.3	0.1	0.10	0.19
2-METHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEXANE	0.2	0.12	0.2	0.0	0.00	0.0	0.1	0.28	0.1	0.1	0.05	0.08
UNIDENTIFIED C6 OLEFINS	0.2	0.16	1.6	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.04	0.33
TRANS-3-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-3-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-TRANS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYLCYCLOPENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETBE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-CIS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.2	0.66	1.5	0.1	0.05	0.41
2,2-DIMETHYLPENTANE	0.1	0.08	0.2	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.02	0.04
METHYLCYCLOPENTANE	0.1	0.08	0.4	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.02	0.07
2,4-DIMETHYLPENTANE	0.2	0.12	0.3	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.03	0.07
2,3,3-TRIMETHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,3-TRIMETHYLBUTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,4-DIMETHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYLCYCLOPENTENE	0.2	0.15	1.3	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.04	0.27
BENZENE	0.3	0.19	0.1	0.0	0.00	0.0	0.2	0.45	0.1	0.1	0.08	0.04
3-METHYL-1-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,3-DIMETHYLPENTANE	0.0	0.01	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYLPENTANE	0.1	0.05	0.1	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.03
1,1-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CYCLOHEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00

3-METHYLHEXANE	0.2	0.11	0.2	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.03	0.05
CIS-1,3-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-ETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,2-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,3-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,4-TRIMETHYLPENTANE	1.4	0.95	1.3	0.0	0.00	0.0	0.4	1.07	0.3	0.4	0.32	0.37
2-METHYL-1-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-3-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-3-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNIDENTIFIED C7	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-2-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-TRANS-3-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-ETHYL-CIS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4,4-TRIMETHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,4-TRIMETHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYL-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.90
METHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1,2-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLHEXANE	0.3	0.17	0.3	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.04	0.06
1,1,3-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4,4-TRIMETHYL-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,3-TRIMETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,5-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLHEXANE	0.2	0.14	0.3	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.03	0.06
1-TRANS-2-CIS-4-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,3-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-TRANS-2-CIS-3-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3,4-TRIMETHYLPENTANE	0.3	0.19	0.5	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.05	0.10
2,3,3-TRIMETHYLPENTANE	0.3	0.20	0.4	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.05	0.08
TOLUENE	1.3	0.86	3.6	0.0	0.00	0.0	0.0	0.00	0.0	0.3	0.22	0.74
2,3-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,1,2-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,4-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,4,4-TETRAMETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-AND-TRANS-3,4-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-METHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-3-ETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-3-ETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-CIS-2-TRANS-3-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1,3-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,4-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-ETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,5-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1-METHYL-3-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1-METHYL-3-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,1-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1-METHYL-2-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-1-ETHYL-CYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4,4-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,4-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,2-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-4-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
OCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNIDENTIFIED C8	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,3-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1,4-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ISOPROPYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3,5-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1-METHYL-2-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-2-ETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLHEPTANE	2.4	1.59	3.2	7.8	4.76	10.1	4.7	13.86	6.3	5.7	4.64	7.65
4,4-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1,2-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
PROPYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
PROPYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-4-ETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,6-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,1,3-TRIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,5-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,3-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00



3,5-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3,4-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
m-& p-XYLENE	0.2	0.11	1.2	0.0	0.00	0.0	0.2	0.69	1.7	0.1	0.08	0.72
4-METHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,4-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-ETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
STYRENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
o-XYLENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-3-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-3-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
NONANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ISOPROPYLBENZENE (CUMENE)	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
n-PROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-3-ETHYLBENZENE	0.1	0.10	1.1	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.02	0.22
1-METHYL-4-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3,5-TRIMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-2-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,4-TRIMETHYLBENZENE	0.2	0.13	1.7	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.03	0.35
TERT-BUTYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-DECENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
DECANE	0.2	0.14	0.1	0.3	0.20	0.1	0.4	1.05	0.2	0.3	0.25	0.14
ISOBUTYLBENZENE	0.2	0.13	0.4	0.3	0.18	0.5	0.3	0.99	0.6	0.3	0.23	0.53
METHYLPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
BUTYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-DIMETHYL-5-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
S-BUTYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-3-ISOPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,3-TRIMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-4-ISOPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
INDAN	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-2-ISOPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-DIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,4-DIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-3-N-PROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-4-N-PROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2-DIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-2-N-PROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,4-DIMETHYL-2-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-DIMETHYL-4-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2-DIMETHYL-4-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-DIMETHYL-2-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNDECANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2-DIMETHYL-3-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,4,5-TETRAMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLBUTYLBENZENE (sec AMYLBENZENE)	0.8	0.50	1.3	0.0	0.00	0.0	0.0	0.00	0.0	0.2	0.13	0.27
3,4-DIMETHYLCUMENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,3,5-TETRAMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TERT-1-BUT-2-METHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,3,4-TETRAMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
N-PENT-BENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TERT-1-BUT-3,5-DIMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TERT-1-BUTYL-4-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
NAPHTHALENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
DODECANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3,5-TRIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,4-TRIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEXYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNIDENTIFIED C9-C12+	0.4	0.27	1.5	0.6	0.35	2.1	0.2	0.60	0.8	0.4	0.35	1.63
FORMALDEHYDE	6.0	3.97	42.9	0.3	0.20	2.2	0.4	1.32	3.2	1.5	1.24	10.94
ACETALDEHYDE	0.4	0.24	2.0	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.08	0.41
ACROLEIN	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ACETONE	0.1	0.04	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.01
PROPIONALDEHYDE	0.2	0.13	1.3	0.4	0.25	2.5	0.0	0.00	0.0	0.2	0.20	1.58
CROTONALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ISOBUTYRALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
METHYL ETHYL KETONE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
BENZALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEXANALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00



TEST NUMBER: G72038FTP10K  
 TEST CAR: FORD F150 P/U #38  
 TEST DATE: 8/28/96  
 TEST FUEL: CNG 7784

COMPOUND	BAG 1	BAG 1	BAG 1	BAG 2	BAG 2	BAG 2	BAG 3	BAG 3	BAG 3	FTP		FTP	FTP
	MG/MI	WEIGHT NMOG %	OZONE, MG/MI	MG/MI	WEIGHT NMOG %	OZONE, MG/MI	MG/MI	WEIGHT NMOG %	OZONE, MG/MI	MG/MI	MG/MI	WEIGHT NMOG %	OZONE, MG/MI
METHANE	1939.7		28.7	2442.7		36.2	1965.1		29.1	2208.2		32.68	
ETHANE	80.5	51.49	20.1	131.8	75.52	33.0	87.8	70.33	21.9	109.2	89.45	27.29	
ETHYLENE	10.3	6.61	75.4	0.3	0.15	1.9	5.9	4.72	43.0	3.9	2.47	28.29	
PROPANE	7.9	5.04	3.8	11.3	6.46	5.4	8.0	6.40	3.8	9.7	6.16	4.85	
PROPYLENE	1.4	0.91	13.4	0.1	0.03	0.5	0.6	0.48	5.6	0.5	0.31	4.55	
ACETYLENE	0.7	0.42	0.3	0.0	0.01	0.0	0.0	0.00	0.0	0.1	0.10	0.07	
PROPADIENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00	
BUTANE	2.6	1.69	2.7	2.0	1.15	2.0	1.7	1.40	1.8	2.1	1.32	2.11	
TRANS-2-BUTENE	0.2	0.12	1.9	0.0	0.00	0.0	0.3	0.25	3.1	0.1	0.08	1.23	
1-BUTENE	0.3	0.17	2.3	0.0	0.00	0.0	0.1	0.11	1.3	0.1	0.06	0.82	
2-METHYLPROPENE (ISOBUTYLENE)	0.4	0.27	2.3	0.0	0.03	0.2	0.2	0.19	1.2	0.2	0.11	0.93	
2,2-DIMETHYLPROPANE (NEOPENTANE)	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00	
PROPENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00	
1,3-BUTADIENE	0.1	0.09	1.6	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.02	0.32	
2-METHYLPROPANE (ISOBUTANE)	3.1	1.98	3.7	1.8	1.01	2.1	1.7	1.35	2.0	2.0	1.28	2.43	
1-BUTYNE	0.0	0.00	0.0	0.4	0.24	3.9	0.0	0.00	0.0	0.2	0.14	2.04	
METHANOL	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00	
CIS-2-BUTENE	0.1	0.09	1.4	0.0	0.00	0.0	0.3	0.24	3.0	0.1	0.07	1.10	
3-METHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00	
ETHANOL	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00	
2-METHYLBUTANE (ISOPENTANE)	5.5	3.49	7.5	0.0	0.00	0.0	0.0	0.00	0.0	1.1	0.72	1.58	
2-BUTYNE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00	
1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00	
2-METHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00	
PENTANE	1.1	0.71	1.2	0.0	0.00	0.0	0.3	0.27	0.4	0.3	0.20	0.33	
UNIDENTIFIED C5 OLEFINS	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00	
2-METHYL-1,3-BUTADIENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00	
TRANS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.02	
3,3-DIMETHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00	
CIS-2-PENTENE	0.0	0.01	0.1	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.02	
2-METHYL-2-BUTENE	0.1	0.06	0.5	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.11	
CYCLOPENTADIENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00	
2,2-DIMETHYLBUTANE	0.0	0.01	0.0	0.0	0.00	0.0	0.1	0.11	0.1	0.0	0.03	0.03	
CYCLOPENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00	
4-METHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00	
3-METHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00	
CYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00	
2,3-DIMETHYLBUTANE	0.2	0.14	0.2	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.03	0.05	
MTBE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00	
2,3-DIMETHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00	
4-METHYL-CIS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00	
2-METHYLPENTANE	0.3	0.19	0.5	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.04	0.09	
4-METHYL-TRANS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00	
3-METHYLPENTANE	0.2	0.10	0.2	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.02	0.05	
2-METHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00	
1-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00	
HEXANE	0.3	0.19	0.3	0.0	0.00	0.0	0.1	0.08	0.1	0.1	0.08	0.09	
UNIDENTIFIED C6 OLEFINS	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00	
TRANS-3-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00	
CIS-3-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00	
TRANS-2-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00	
3-METHYL-TRANS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00	
2-METHYL-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00	
3-METHYLCYCLOPENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00	
CIS-2-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00	
ETBE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00	
3-METHYL-CIS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00	
2,2-DIMETHYLPENTANE	0.1	0.06	0.1	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.03	
METHYLCYCLOPENTANE	0.1	0.06	0.2	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.05	
2,4-DIMETHYLPENTANE	0.3	0.18	0.5	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.04	0.10	
2,3,3-TRIMETHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00	
2,2,3-TRIMETHYLBUTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00	
3,4-DIMETHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00	
1-METHYLCYCLOPENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00	
BENZENE	0.5	0.35	0.2	0.0	0.00	0.0	0.5	0.39	0.2	0.2	0.16	0.10	
3-METHYL-1-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00	
3,3-DIMETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00	
CYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00	
2-METHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00	
2,3-DIMETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00	
1,1-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00	
CYCLOHEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00	

3-METHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1,3-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-ETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,2-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,3-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,4-TRIMETHYLPENTANE	4.7	3.02	4.4	0.0	0.00	0.0	0.0	0.03	0.0	1.0	0.63	0.92
2-METHYL-1-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-3-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-3-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNIDENTIFIED C7	0.0	0.00	0.0	0.2	0.12	1.0	0.4	0.29	1.7	0.2	0.14	0.96
2-METHYL-2-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-TRANS-3-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-ETHYL-CIS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4,4-TRIMETHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,4-TRIMETHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYL-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
METHYLCYCLOHEXANE	0.1	0.05	0.1	0.0	0.00	0.0	0.0	0.02	0.0	0.0	0.01	0.04
CIS-1,2-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,1,3-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4,4-TRIMETHYL-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,3-TRIMETHYLPENTANE	0.5	0.29	0.5	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.06	0.11
2,5-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLHEXANE	0.6	0.39	0.9	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.08	0.19
1-TRANS-2-CIS-4-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,3-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-TRANS-2-CIS-3-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3,4-TRIMETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3,3-TRIMETHYLPENTANE	1.0	0.65	1.2	0.0	0.00	0.0	0.0	0.03	0.1	0.2	0.14	0.27
TOLUENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,1,2-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLHEPTANE	0.2	0.10	0.2	0.2	0.14	0.2	0.0	0.00	0.0	0.2	0.10	0.15
3,4-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,4,4-TETRAMETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-AND-TRANS-3,4-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-METHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-3-ETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-3-ETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-CIS-2-TRANS-3-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1,3-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,4-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-ETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,5-TRIMETHYLHEXANE	0.3	0.21	0.3	0.0	0.00	0.0	0.1	0.08	0.1	0.1	0.06	0.08
TRANS-1-METHYL-3-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1-METHYL-3-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,1-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1-METHYL-2-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-1-ETHYL-CYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4,4-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,4-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,2-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-4-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
OCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNIDENTIFIED C8	0.6	0.40	2.1	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.08	0.44
TRANS-2-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,3-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1,4-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ISOPROPYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3,5-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1-METHYL-2-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-2-ETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLHEPTANE	8.5	5.41	11.3	13.8	7.91	18.5	6.2	4.95	8.3	10.6	6.75	14.23
4,4-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1,2-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
PROPYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
PROPYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-4-ETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,6-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,1,3-TRIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,5-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,3-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00

3,5-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3,4-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
m- & p-XYLENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-METHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,4-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-ETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
STYRENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
o-XYLENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-3-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-3-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
NONANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ISOPROPYLBENZENE (CUMENE)	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
n-PROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-3-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-4-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3,5-TRIMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-2-ETHYLBENZENE	0.0	0.02	0.2	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.04
1,2,4-TRIMETHYLBENZENE	0.1	0.09	1.3	0.0	0.00	0.0	0.4	0.28	3.1	0.1	0.08	1.12
TERT-BUTYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-DECENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
DECANE	4.0	2.59	1.9	4.6	2.66	2.2	2.7	2.15	1.3	4.0	2.53	1.87
ISOBUTYLBENZENE	3.8	2.44	7.1	4.4	2.51	8.2	2.5	2.03	4.7	3.8	2.39	7.02
METHYLPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
BUTYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-DIMETHYL-5-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
S-BUTYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-3-ISOPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,3-TRIMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-4-ISOPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
INDAN	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.0	0.0	0.00	0.01
1-METHYL-2-ISOPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-DIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,4-DIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-3-N-PROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-4-N-PROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2-DIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-2-N-PROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,4-DIMETHYL-2-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-DIMETHYL-4-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2-DIMETHYL-4-ETHYLBENZENE	0.0	0.00	0.0	0.3	0.17	2.8	0.0	0.00	0.0	0.2	0.10	1.43
1,3-DIMETHYL-2-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNDECANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2-DIMETHYL-3-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,4,5-TETRAMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLBUTYLBENZENE (sec AMYLBENZENE)	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,4-DIMETHYLCUMENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,3,5-TETRAMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TERT-1-BUT-2-METHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,3,4-TETRAMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
N-PENT-BENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TERT-1-BUT-3,5-DIMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TERT-1-BUTYL-4-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
NAPHTHALENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
DODECANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3,5-TRIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,4-TRIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEXYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNIDENTIFIED C9-C12+	2.4	1.52	9.1	3.1	1.77	11.8	1.4	1.10	5.2	2.5	1.57	9.43
FORMALDEHYDE	10.5	6.70	74.9	0.1	0.07	0.9	2.1	1.72	15.4	2.8	1.79	20.15
ACETALDEHYDE	0.8	0.53	4.6	0.0	0.00	0.0	0.4	0.36	2.5	0.3	0.19	1.62
ACROLEIN	0.4	0.27	2.8	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.05	0.58
ACETONE	0.9	0.57	0.5	0.1	0.04	0.0	0.4	0.31	0.2	0.3	0.21	0.19
PROPIONALDEHYDE	0.6	0.37	3.8	0.0	0.00	0.0	0.4	0.31	2.5	0.2	0.14	1.48
CROTONALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ISOBUTYRALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
METHYL ETHYL KETONE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
BENZALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEXANALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00

TEST NUMBER: G72038FTP20K  
 TEST CAR: 1995 F150 PICKUP #38  
 TEST DATE: 8/5/97  
 TEST FUEL: CNG

COMPOUND	BAG 1	BAG 1	BAG 1	BAG 2	BAG 2	BAG 2	BAG 3	BAG 3	BAG 3	FTP		
	MG/M	WEIGHT NMKG %	OZONE, MG/M	MG/M	WEIGHT NMKG %	OZONE, MG/M	MG/M	WEIGHT NMKG %	OZONE, MG/M	MG/M	WEIGHT NMKG %	OZONE, MG/M
METHANE	2055.0		30.4	2354.8		34.9	1809.2		26.8	2143.1		31.72
ETHANE	95.7	71.88	23.9	114.0	87.74	28.5	85.9	77.41	21.5	102.5	81.69	25.63
ETHYLENE	13.3	9.99	97.2	0.2	0.18	1.7	8.1	5.47	44.2	4.6	3.63	33.17
PROPANE	10.2	7.67	4.9	9.9	7.65	4.8	7.9	7.16	3.8	9.5	7.53	4.54
PROPYLENE	1.0	0.75	9.5	0.0	0.00	0.0	0.6	0.52	5.4	0.4	0.29	3.44
ACETYLENE	0.4	0.33	0.2	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.07	0.05
PROPADIENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
BUTANE	2.5	1.88	2.6	1.8	1.38	1.8	2.2	2.01	2.3	2.1	1.63	2.09
TRANS-2-BUTENE	0.1	0.11	1.4	0.0	0.00	0.0	0.2	0.22	2.4	0.1	0.08	0.96
1-BUTENE	0.2	0.13	1.5	0.0	0.00	0.0	0.1	0.09	0.9	0.1	0.05	0.58
2-METHYLPROPENE (ISOBUTYLENE)	0.3	0.22	1.6	0.2	0.13	0.9	0.4	0.37	2.2	0.3	0.21	1.38
2,2-DIMETHYLPROPANE (NEOPENTANE)	0.1	0.04	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.00
PROPENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-BUTADIENE	0.2	0.13	1.8	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.03	0.38
2-METHYLPROPANE (ISOBUTANE)	1.8	1.22	2.0	1.4	1.05	1.6	1.9	1.67	2.2	1.6	1.24	1.88
1-BUTYNE	0.1	0.05	0.6	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.12
METHANOL	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-BUTENE	0.2	0.12	1.8	0.0	0.00	0.0	0.2	0.21	2.4	0.1	0.08	0.98
3-METHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHANOL	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLBUTANE (ISOPENTANE)	2.6	1.93	3.6	1.3	1.03	1.8	3.2	2.87	4.4	2.1	1.67	2.90
2-BUTYNE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
PENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNIDENTIFIED C5 OLEFINS	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-1,3-BUTADIENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,3-DIMETHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-2-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TERT-BUTANOL	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CYCLOPENTADIENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLBUTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CYCLOPENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-METHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYLBUTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
MTBE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-METHYL-CIS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-METHYL-TRANS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNIDENTIFIED C6 OLEFINS	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-3-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-3-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
DI-ISOPROPYL ETHER	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-TRANS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYLCYCLOPENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETBE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-CIS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLPENTANE, NOTE A	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
METHYLCYCLOPENTANE, NOTE A	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,3-TRIMETHYLBUTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,4-DIMETHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYLCYCLOPENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
BENZENE	0.3	0.21	0.1	0.0	0.03	0.0	0.2	0.17	0.1	0.1	0.10	0.05
3-METHYL-1-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,3-DIMETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,1-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TERT-AMYL METHYL ETHER	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CYCLOHEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00

3-METHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1,3-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-ETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,2-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,3-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,4-TRIMETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-1-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-3-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-3-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNIDENTIFIED C7	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-2-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-TRANS-3-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-ETHYL-CIS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4,4-TRIMETHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYL-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
METHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1,2-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,1,3-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4,4-TRIMETHYL-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,3-TRIMETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,5-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-TRANS-2-CIS-4-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,3-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-TRANS-2-CIS-3-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3,4-TRIMETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3,3-TRIMETHYLPENTANE	0.2	0.13	0.2	0.0	0.00	0.0	0.1	0.12	0.2	0.1	0.06	0.09
TOLUENE	0.2	0.16	0.6	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.03	0.12
2,3-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,1,2-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,4-DIMETHYLHEXANE, NOTE B	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-METHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-CIS,2-TRANS,3-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1,3-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,4-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-ETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,5-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1-METHYL-3-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1-METHYL-3-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,1-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1-METHYL-2-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-1-ETHYL-CYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4,4-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,4-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,2-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-4-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
OCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNIDENTIFIED C8	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,3-DIMETHYLCYCLOHEXANE, NOTE C	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ISOPROPYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3,5-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1-METHYL-2-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4,4-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1,2-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,6-DIMETHYLHEPTANE, NOTE D	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,1,3-TRIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,5-DIMETHYLHEPTANE, NOTE E	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,3-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,5-DIMETHYLHEPTANE, NOTE E	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3,4-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
m- & p-XYLENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-METHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,4-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-ETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00



STYRENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
o-XYLENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-3-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-3-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
NONANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ISOPROPYLBENZENE (CUMENE)	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
n-PROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-3-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-4-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3,5-TRIMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-2-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,4-TRIMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TERT-BUTYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-DECENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
DECANE, NOTE F	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ISOBUTYLBENZENE, NOTE F	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-DIMETHYL-5-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
METHYLPROPYLBENZENE (sec butylbenzene)	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-3-ISOPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,3-TRIMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-4-ISOPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
INDAN	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-2-ISOPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-DIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,4-DIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-3-N-PROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-4-N-PROPYLBENZENE, NOTE G	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2-DIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-2-N-PROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,4-DIMETHYL-2-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-DIMETHYL-4-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2-DIMETHYL-4-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-DIMETHYL-2-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNDECANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2-DIMETHYL-3-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,4,5-TETRAMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLBUTYLBENZENE (sec AMYLBENZENE)	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,4-DIMETHYLCUMENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,3,5-TETRAMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TERT-1-BUT-2-METHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,3,4-TETRAMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
N-PENT-BENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TERT-1-BUT-3,5-DIMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TERT-1-BUTYL-4-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
NAPHTHALENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
DODECANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3,5-TRIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,4-TRIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEXYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNIDENTIFIED C9-C12+	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
FORMALDEHYDE	3.5	2.64	25.2	0.3	0.24	2.2	1.0	0.88	7.0	1.2	0.92	8.29
ACETALDEHYDE	0.1	0.08	0.8	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.02	0.13
ACROLEIN	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.08	0.6	0.0	0.02	0.18
ACETONE	0.0	0.00	0.0	0.1	0.08	0.0	0.0	0.00	0.0	0.0	0.03	0.02
PROPIONALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CROTONALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.08	0.5	0.0	0.02	0.12
ISOBUTYRALDEHYDE, NOTE H	0.0	0.00	0.0	0.0	0.02	0.1	0.1	0.08	0.4	0.0	0.03	0.19
METHYL ETHYL KETONE, NOTE H	0.0	0.00	0.0	0.0	0.02	0.0	0.1	0.08	0.1	0.0	0.03	0.04
BENZALDEHYDE	0.2	0.17	-0.1	0.3	0.24	-0.2	0.0	0.00	0.0	0.2	0.16	-0.11
ISOVALERALDEHYDE	0.2	0.15	0.9	0.0	0.00	0.0	0.1	0.05	0.2	0.1	0.04	0.25
VALERALDEHYDE	0.3	0.23	1.3	0.2	0.18	1.0	0.3	0.23	1.1	0.3	0.20	1.11
O-TOLUALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
M/P-TOLUALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEXANALDEHYDE	0.0	0.02	0.1	0.1	0.08	0.4	0.1	0.05	0.2	0.1	0.08	0.28
DIMETHYLBENZALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.2	0.20	-0.1	0.1	0.05	-0.03

A - 2,2-Dimethylpentane and methylcyclopentane co-elute. GC peak area split equally between the two compounds.  
B - 3-Methyl-3-ethylpentane co-elutes with reported compound. Not reported separately.  
C - Cis-1,4-Dimethylcyclohexane co-elutes with reported compound. Not reported separately.  
D - Propylcyclopentane co-elutes with reported compound. Not reported separately.  
E - 2,5-Dimethylheptane and 3,5-dimethylheptane co-elute. GC peak area split equally between the two compounds.  
F - Decane and isobutylbenzene co-elute. GC peak area split equally between the two compounds.  
G - n-Butylbenzene co-elutes with reported compound. Not reported separately.  
H - Isobutyraldehyde and methyl ethyl ketone co-elute. LC peak area split equally between the two compounds.

TEST NUMBER: G72038FTP4K  
 TEST CAR: 1995 FORD F-150 PICKUP #38  
 TEST DATE: 12/12/95  
 TEST FUEL: EEE

COMPOUND	BAG 1	BAG 1	BAG 1	BAG 2	BAG 2	BAG 2	BAG 3	BAG 3	BAG 3	FTP		FTP
	MG/M	WEIGHT	OZONE,	MG/M	WEIGHT	OZONE	MG/M	WEIGHT	OZONE	MG/M	WEIGHT	OZONE
		NMOG %	MG/M		NMOG %	MG/M		NMOG %	MG/M		NMOG %	MG/M
METHANE	156.4		2.3	109.8		1.6	105.3		1.6	118.2		1.75
ETHANE	25.5	2.44	6.4	15.9	33.47	4.0	0.0	0.00	0.0	13.5	3.89	3.38
ETHYLENE	66.6	6.25	478.1	0.2	0.49	1.7	24.0	6.22	175.3	20.3	5.84	148.00
PROPANE	1.9	0.18	0.9	0.5	1.15	0.3	1.2	0.30	0.6	1.0	0.29	0.48
PROPYLENE	36.2	3.45	340.3	0.1	0.24	1.1	11.7	3.02	109.5	10.8	3.09	101.09
ACETYLENE	12.5	1.19	6.2	0.0	0.00	0.0	0.0	0.00	0.0	2.6	0.74	1.29
PROPADIENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
BUTANE	8.0	0.76	8.2	1.9	4.02	1.9	4.6	1.19	4.7	3.9	1.12	3.99
TRANS-2-BUTENE	5.2	0.49	51.5	0.0	0.00	0.0	3.9	1.01	39.0	2.1	0.62	21.35
1-BUTENE	6.9	0.66	61.6	0.0	0.00	0.0	1.7	0.44	15.1	1.9	0.55	16.92
2-METHYLPROPENE (ISOBUTYLENE)	24.3	2.32	129.1	0.1	0.16	0.4	8.1	2.09	43.0	7.3	2.10	38.72
2,2-DIMETHYLPROPANE (NEOPENTANE)	1.3	0.12	0.5	0.0	0.00	0.0	0.5	0.14	0.2	0.4	0.12	0.15
PROPYLENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-BUTADIENE	1.2	0.11	12.7	0.0	0.00	0.0	0.0	0.00	0.0	0.2	0.07	2.64
2-METHYLPROPANE (ISOBUTANE)	16.0	1.53	19.4	2.7	5.77	3.3	9.3	2.41	11.3	7.3	2.10	8.82
1-BUTYNE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
METHANOL	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-BUTENE	10.4	0.99	103.5	0.0	0.00	0.0	3.7	0.96	36.7	3.2	0.91	31.51
3-METHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHANOL	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLBUTANE (ISOPENTANE)	112.8	10.75	155.6	9.1	19.17	12.6	56.7	14.66	78.2	43.6	12.54	60.19
2-BUTYNE	20.9	2.00	193.5	0.0	0.00	0.0	0.0	0.00	0.0	4.3	1.25	40.06
1-PENTENE	1.0	0.10	8.4	0.0	0.00	0.0	0.0	0.00	0.0	0.2	0.08	1.33
2-METHYL-1-BUTENE	1.8	0.17	8.6	0.0	0.00	0.0	0.4	0.11	2.0	0.5	0.14	2.34
PENTANE	11.2	1.07	11.6	1.0	2.16	1.1	5.8	1.49	6.0	4.4	1.27	4.61
UNIDENTIFIED C5 OLEFINS	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-1,3-BUTADIENE	0.4	0.04	3.5	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02	0.72
TRANS-2-PENTENE	0.7	0.07	6.6	0.0	0.00	0.0	0.4	0.11	3.6	0.3	0.08	2.85
3,3-DIMETHYL-1-BUTENE	0.3	0.03	1.5	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02	0.32
CIS-2-PENTENE	0.6	0.06	5.3	0.0	0.00	0.0	0.2	0.06	2.1	0.2	0.05	1.66
2-METHYL-2-BUTENE	3.4	0.32	21.6	0.0	0.00	0.0	1.6	0.42	10.3	1.1	0.33	7.29
CYCLOPENTADIENE	0.7	0.06	5.2	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.04	1.08
2,2-DIMETHYLBUTANE	1.8	0.17	1.5	0.4	0.75	0.3	1.0	0.25	0.8	0.8	0.24	0.68
CYCLOPENTENE	1.4	0.13	10.5	0.0	0.00	0.0	0.5	0.14	4.2	0.4	0.12	3.32
4-METHYL-1-PENTENE	0.5	0.04	2.0	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.03	0.42
3-METHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CYCLOPENTANE	1.2	0.12	2.9	0.0	0.00	0.0	0.6	0.15	1.4	0.4	0.12	0.98
2,3-DIMETHYLBUTANE	7.1	0.68	7.6	0.5	1.01	0.5	3.4	0.88	3.6	2.6	0.76	2.83
MTBE	0.2	0.02	0.1	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.03
2,3-DIMETHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-METHYL-CIS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLPENTANE	12.3	1.17	18.8	0.6	1.25	0.9	5.9	1.52	9.0	4.5	1.28	6.82
4-METHYL-TRANS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYLPENTANE	8.9	0.85	13.5	0.4	0.89	0.8	4.3	1.12	6.6	3.3	0.93	4.94
2-METHYL-1-PENTENE	0.2	0.02	1.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.20
1-HEXENE	0.4	0.04	1.8	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02	0.38
HEXANE	8.9	0.85	8.7	0.4	0.75	0.3	4.1	1.06	4.0	3.2	0.91	3.10
UNIDENTIFIED C6 OLEFINS	0.2	0.02	1.5	0.0	0.00	0.0	0.1	0.02	0.6	0.1	0.02	0.48
TRANS-3-HEXENE	0.2	0.02	1.3	0.0	0.00	0.0	0.1	0.03	0.8	0.1	0.02	0.49
CIS-3-HEXENE	0.3	0.03	2.1	0.0	0.00	0.0	0.2	0.05	1.3	0.1	0.03	0.78
TRANS-2-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-TRANS-2-PENTENE	0.5	0.05	3.3	0.0	0.00	0.0	0.2	0.06	1.4	0.2	0.05	1.08
2-METHYL-2-PENTENE	0.6	0.05	3.8	0.0	0.00	0.0	0.2	0.04	1.1	0.2	0.05	1.08
3-METHYLCYCLOPENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-HEXENE	0.4	0.04	3.0	0.0	0.00	0.0	0.1	0.02	0.6	0.1	0.03	0.79
ETBE	0.0	0.00	0.0	0.0	0.00	0.0	0.3	0.07	0.5	0.1	0.02	0.14
3-METHYL-CIS-2-PENTENE	0.5	0.05	3.3	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.03	0.69
2,2-DIMETHYLPENTANE	2.7	0.25	3.7	0.3	0.71	0.5	1.1	0.27	1.5	1.0	0.29	1.42
METHYLCYCLOPENTANE	2.6	0.25	7.4	0.3	0.72	1.0	1.0	0.27	2.9	1.0	0.29	2.83
2,4-DIMETHYLPENTANE	7.1	0.67	12.6	0.0	0.00	0.0	3.2	0.84	5.8	2.4	0.68	4.19
2,3,3-TRIMETHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,3-TRIMETHYLBUTANE	0.5	0.05	0.6	0.0	0.00	0.0	0.2	0.04	0.2	0.1	0.04	0.19
3,4-DIMETHYL-1-PENTENE	0.1	0.01	0.5	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.10
1-METHYLCYCLOPENTENE	0.9	0.09	5.1	0.0	0.00	0.0	0.4	0.10	2.3	0.3	0.09	1.69
BENZENE	42.0	4.01	17.7	2.2	4.63	0.9	17.7	4.58	7.4	14.7	4.23	6.18
3-METHYL-1-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,3-DIMETHYLPENTANE	0.8	0.08	0.6	0.0	0.00	0.0	0.4	0.11	0.3	0.3	0.08	0.20
CYCLOHEXANE	3.2	0.30	4.0	0.0	0.00	0.0	1.3	0.35	1.7	1.0	0.29	1.31
2-METHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYLPENTANE	9.3	0.89	14.0	0.1	0.19	0.1	4.2	1.09	6.3	3.1	0.90	4.72
1,1-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CYCLOHEXENE	0.2	0.02	0.9	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.19

3-METHYLHEXANE	4.6	0.44	6.5	0.0	0.02	0.0	2.1	0.54	2.9	1.5	0.44	2.15
CIS-1,3-DIMETHYLCYCLOPENTANE	0.4	0.04	1.0	0.0	0.00	0.0	0.2	0.05	0.4	0.1	0.04	0.32
3-ETHYLPENTANE	0.3	0.03	0.5	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02	0.10
TRANS-1,2-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,3-DIMETHYLCYCLOPENTANE	0.3	0.03	0.8	0.0	0.00	0.0	0.2	0.04	0.4	0.1	0.03	0.29
1-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,4-TRIMETHYLPENTANE	100.8	9.81	93.7	4.6	9.71	4.3	49.8	12.87	46.3	36.9	10.61	34.32
2-METHYL-1-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-3-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEPTANE	2.1	0.20	1.7	0.0	0.00	0.0	0.9	0.24	0.8	0.7	0.20	0.56
CIS-3-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNIDENTIFIED C7	0.3	0.03	1.6	0.0	0.00	0.0	0.2	0.04	0.7	0.1	0.03	0.52
2-METHYL-2-HEXENE	0.1	0.01	0.8	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.16
3-METHYL-TRANS-3-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-ETHYL-CIS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4,4-TRIMETHYL-1-PENTENE	0.2	0.02	0.6	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.12
2,2,4-TRIMETHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYL-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-HEPTENE	0.2	0.02	1.2	0.0	0.00	0.0	0.1	0.03	0.7	0.1	0.02	0.46
METHYLCYCLOHEXANE	2.7	0.25	4.9	0.0	0.00	0.0	1.1	0.29	2.1	0.9	0.25	1.59
CIS-1,2-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLHEXANE	0.0	0.00	0.0	0.5	1.11	0.6	0.0	0.00	0.0	0.3	0.08	0.33
1,1,3-TRIMETHYLCYCLOPENTANE	0.2	0.02	0.4	0.0	0.00	0.0	0.1	0.03	0.2	0.1	0.02	0.18
2,4,4-TRIMETHYL-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,3-TRIMETHYLPENTANE	13.9	1.32	16.7	0.0	0.00	0.0	6.5	1.68	7.8	4.7	1.34	5.59
2,5-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLHEXANE	13.5	1.29	20.2	0.3	0.73	0.5	5.8	1.49	8.8	4.6	1.31	8.83
1-TRANS-2-CIS-4-TRIMETHYLCYCLOPENTANE	0.2	0.02	0.4	0.0	0.00	0.0	0.1	0.03	0.3	0.1	0.02	0.15
3,3-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-TRANS-2-CIS-3-TRIMETHYLCYCLOPENTANE	0.1	0.01	0.2	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.05
2,3,4-TRIMETHYLPENTANE	17.8	1.70	28.5	0.8	1.36	1.0	8.2	2.12	13.1	6.3	1.80	10.03
2,3,3-TRIMETHYLPENTANE	27.0	2.57	32.4	1.0	2.16	1.2	13.1	3.39	15.7	9.7	2.79	11.65
TOLUENE	189.4	18.06	517.0	1.2	2.62	3.4	63.8	16.51	174.3	57.4	16.50	156.63
2,3-DIMETHYLHEXANE	9.5	0.91	12.6	0.0	0.00	0.0	3.4	0.87	4.4	2.9	0.83	3.83
1,1,2-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLHEPTANE	1.4	0.13	1.3	0.0	0.00	0.0	0.6	0.15	0.5	0.4	0.13	0.42
3,4-DIMETHYLHEXANE	1.9	0.18	2.2	0.0	0.00	0.0	0.8	0.21	1.0	0.6	0.18	0.74
2,2,4,4-TETRAMETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-AND-TRANS-3,4-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-METHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-3-ETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-3-ETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYLHEPTANE	0.8	0.08	0.8	0.0	0.00	0.0	0.3	0.09	0.3	0.3	0.07	0.25
1-CIS-2-TRANS-3-TRIMETHYLCYCLOPENTANE	0.1	0.01	0.3	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.05
CIS-1,3-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,4-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-ETHYLHEXANE	0.3	0.03	0.4	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02	0.07
2,2,5-TRIMETHYLHEXANE	9.0	0.86	8.7	0.0	0.00	0.0	4.0	1.03	3.9	3.0	0.85	2.87
TRANS-1-METHYL-3-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1-METHYL-3-ETHYLCYCLOPENTANE	0.1	0.01	0.2	0.3	0.63	0.6	0.0	0.00	0.0	0.2	0.05	0.35
1,1-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1-METHYL-2-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-1-ETHYL-CYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4,4-TRIMETHYLHEXANE	0.5	0.04	0.5	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.03	0.11
2,2,4-TRIMETHYLHEXANE	0.3	0.03	0.4	0.0	0.00	0.0	0.2	0.04	0.2	0.1	0.03	0.13
TRANS-1,2-DIMETHYLCYCLOHEXANE	0.1	0.01	0.3	0.0	0.00	0.0	0.1	0.02	0.2	0.1	0.02	0.10
1-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-4-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
OCTANE	0.5	0.05	0.3	0.0	0.00	0.0	0.2	0.06	0.1	0.2	0.05	0.10
UNIDENTIFIED C8	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-OCTENE	0.1	0.01	0.6	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.12
TRANS-1,3-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1,4-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-OCTENE	0.1	0.01	0.6	0.0	0.00	0.0	0.5	0.13	2.6	0.2	0.05	0.83
ISOPROPYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3,5-TRIMETHYLHEXANE	1.2	0.12	1.4	0.0	0.00	0.0	0.0	0.00	0.0	0.3	0.07	0.29
CIS-1-METHYL-2-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-2-ETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLHEPTANE	0.2	0.02	0.3	0.0	0.00	0.0	0.1	0.03	0.1	0.1	0.02	0.11
4,4-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.2	0.05	0.2	0.1	0.01	0.06
CIS-1,2-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
PROPYLCYCLOPENTANE	0.2	0.02	0.4	0.0	0.00	0.0	0.1	0.02	0.1	0.0	0.01	0.11
ETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
PROPYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-4-ETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,6-DIMETHYLHEPTANE	0.2	0.02	0.2	0.0	0.00	0.0	0.1	0.02	0.1	0.0	0.01	0.06
1,1,3-TRIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,5-DIMETHYLHEPTANE	0.3	0.02	0.3	0.0	0.00	0.0	0.1	0.03	0.1	0.1	0.02	0.10
3,3-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00



3,5-DIMETHYLHEPTANE	0.3	0.02	0.3	0.0	0.00	0.0	0.1	0.03	0.1	0.1	0.02	0.10
ETHYLBENZENE	7.3	0.70	19.7	0.0	0.00	0.0	2.9	0.74	7.7	2.3	0.66	6.19
2,3,4-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
m- & p-XYLENE	9.8	0.94	72.8	0.1	0.30	1.0	4.6	1.20	34.1	3.4	0.97	24.95
4-METHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02	0.1	0.0	0.01	0.03
3,4-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-ETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLOCTANE	0.2	0.02	0.3	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.06
3-METHYLOCTANE	0.1	0.01	0.1	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.02
STYRENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
o-XYLENE	5.5	0.53	35.9	0.0	0.00	0.0	2.4	0.63	15.7	1.8	0.52	11.73
1-NONENE	0.5	0.04	1.0	0.0	0.00	0.0	0.2	0.04	0.3	0.1	0.04	0.30
TRANS-3-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-3-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
NONANE	0.3	0.03	0.2	0.0	0.00	0.0	0.2	0.04	0.1	0.1	0.03	0.06
TRANS-2-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ISOPROPYLBENZENE (CUMENE)	1.2	0.12	2.7	0.0	0.00	0.0	0.3	0.07	0.6	0.3	0.10	0.74
2,2-DIMETHYLOCTANE	0.2	0.02	0.2	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.05
2,4-DIMETHYLOCTANE	1.0	0.10	1.0	0.0	0.00	0.0	0.0	0.00	0.0	0.2	0.06	0.21
n-PROPYLBENZENE	5.6	0.53	11.9	0.0	0.00	0.0	1.1	0.29	2.4	1.5	0.42	3.11
1-METHYL-3-ETHYLBENZENE	23.8	2.27	171.0	0.3	0.62	2.1	6.0	1.56	43.5	6.7	1.93	48.45
1-METHYL-4-ETHYLBENZENE	10.4	0.99	75.0	0.0	0.00	0.0	2.3	0.60	16.7	2.8	0.80	20.11
1,3,5-TRIMETHYLBENZENE	12.1	1.15	122.5	0.2	0.48	2.3	3.0	0.78	30.4	3.4	0.99	34.90
1-METHYL-2-ETHYLBENZENE	8.5	0.81	60.8	0.2	0.32	1.1	2.1	0.54	14.9	2.4	0.69	17.26
1,2,4-TRIMETHYLBENZENE	35.1	3.35	309.8	0.2	0.45	1.9	6.8	1.76	60.1	9.2	2.66	81.63
TERT-BUTYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-DECENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
DECANE	0.4	0.03	0.2	0.0	0.03	0.0	0.0	0.01	0.0	0.1	0.02	0.04
ISOBUTYLBENZENE	0.3	0.03	0.6	0.0	0.03	0.0	0.0	0.01	0.0	0.1	0.02	0.15
METHYLPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
BUTYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-DIMETHYL-5-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
S-BUTYLBENZENE	0.4	0.04	0.8	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.03	0.17
1-METHYL-3-ISOPROPYLBENZENE	4.9	0.46	28.4	0.0	0.00	0.0	1.0	0.26	5.8	1.3	0.37	7.48
1,2,3-TRIMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-4-ISOPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
INDAN	2.1	0.20	2.2	0.0	0.00	0.0	0.4	0.10	0.4	0.5	0.15	0.57
1-METHYL-2-ISOPROPYLBENZENE	0.7	0.07	4.3	0.0	0.00	0.0	0.0	0.00	0.0	0.2	0.04	0.90
1,3-DIETHYLBENZENE	0.4	0.04	2.8	0.0	0.00	0.0	0.1	0.03	0.8	0.1	0.04	0.80
1,4-DIETHYLBENZENE	1.7	0.17	11.2	0.0	0.00	0.0	0.4	0.11	2.8	0.5	0.14	3.09
1-METHYL-3-N-PROPYLBENZENE	1.4	0.14	9.2	0.0	0.00	0.0	0.1	0.03	0.9	0.3	0.10	2.14
1-METHYL-4-N-PROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2-DIETHYLBENZENE	2.0	0.19	12.7	0.0	0.00	0.0	0.2	0.06	1.8	0.5	0.14	3.07
1-METHYL-2-N-PROPYLBENZENE	1.0	0.10	6.6	0.0	0.00	0.0	0.3	0.07	1.9	0.3	0.08	1.87
1,4-DIMETHYL-2-ETHYLBENZENE	1.6	0.15	14.5	0.0	0.00	0.0	0.2	0.04	1.5	0.4	0.11	3.42
1,3-DIMETHYL-4-ETHYLBENZENE	0.9	0.08	7.9	0.0	0.00	0.0	0.0	0.00	0.0	0.2	0.05	1.65
1,2-DIMETHYL-4-ETHYLBENZENE	1.1	0.10	9.7	0.0	0.00	0.0	0.0	0.00	0.0	0.2	0.06	2.01
1,3-DIMETHYL-2-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNDECANE	0.3	0.03	0.1	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02	0.03
1,2-DIMETHYL-3-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,4,5-TETRAMETHYLBENZENE	0.1	0.01	0.9	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.20
2-METHYLBUTYLBENZENE (sec AMYLBENZENE)	0.2	0.02	0.3	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.06
3,4-DIMETHYLCUMENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,3,5-TETRAMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TERT-1-BUT-2-METHYLBENZENE	0.1	0.01	0.7	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.14
1,2,3,4-TETRAMETHYLBENZENE	0.2	0.02	1.5	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.31
N-PENT-BENZENE	0.1	0.01	0.1	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.03
TERT-1-BUT-3,5-DIMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TERT-1-BUTYL-4-ETHYLBENZENE	0.2	0.02	1.5	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.01	0.30
NAPHTHALENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
DODECANE	0.2	0.02	0.1	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.02
1,3,5-TRIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,4-TRIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEXYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNIDENTIFIED C9-C12+	7.8	0.75	29.9	0.4	0.76	1.4	1.9	0.48	7.1	2.3	0.67	8.84
FORMALDEHYDE	7.3	0.69	52.0	0.4	0.76	2.6	1.2	0.32	8.8	2.0	0.58	14.53
ACETALDEHYDE	2.5	0.23	13.5	0.0	0.05	0.1	0.7	0.19	4.0	0.7	0.21	3.98
ACROLEIN	0.2	0.02	1.1	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.23
ACETONE	1.3	0.13	0.7	0.2	0.33	0.1	0.6	0.17	0.4	0.5	0.15	0.30
PROPIONALDEHYDE	0.5	0.05	3.1	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.03	0.64
CROTONALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ISOBUTYRALDEHYDE	0.1	0.01	0.3	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.06
METHYL ETHYL KETONE	0.1	0.01	0.1	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.01
BENZALDEHYDE	1.9	0.18	-1.0	0.0	0.00	0.0	0.0	0.00	0.0	0.4	0.11	-0.22
HEXANALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00

TEST NUMBER: G72038FTP10K  
 TEST CAR: FORD F150 PICKUP #38  
 TEST DATE: 8/27/96  
 TEST FUEL: EEE

COMPOUND	BAG 1	BAG 1	BAG 1	BAG 2	BAG 2	BAG 2	BAG 3	BAG 3	BAG 3	FTP		FTP	
	MG/MI	WEIGHT NMOG %	OZONE, MG/MI	MG/MI	WEIGHT NMOG %	OZONE MG/MI	MG/MI	WEIGHT NMOG %	OZONE MG/MI	MG/MI	WEIGHT NMOG %	MG/MI	OZONE MG/MI
METHANE	141.3		2.1	142.6		2.1	109.6		1.6	133.3			1.97
ETHANE	28.1	2.53	7.0	29.4	16.49	7.3	25.2	5.31	6.3	28.0	6.19		7.00
ETHYLENE	64.4	5.80	469.2	3.5	1.97	25.6	30.0	6.32	219.0	23.4	5.17		170.25
PROPANE	2.5	0.23	1.2	1.6	0.90	0.8	0.0	0.00	0.0	1.4	0.30		0.65
PROPYLENE	39.7	3.58	373.3	0.9	0.53	8.9	14.2	2.98	133.0	12.6	2.78		118.20
ACETYLENE	15.3	1.37	7.6	0.0	0.00	0.0	0.0	0.00	0.0	3.2	0.70		1.58
PROPADIENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00		0.00
BUTANE	15.4	1.39	15.7	8.5	4.78	8.7	9.8	2.05	10.0	10.3	2.27		10.49
TRANS-2-BUTENE	5.2	0.47	52.0	0.2	0.13	2.3	4.2	0.88	41.6	2.3	0.52		23.31
1-BUTENE	5.7	0.51	50.8	0.2	0.11	1.7	1.7	0.37	15.5	1.8	0.39		15.64
2-METHYLPROPENE (ISOBUTYLENE)	28.6	2.58	152.1	0.6	0.33	3.1	9.8	2.06	51.9	8.9	1.97		47.27
2,2-DIMETHYLPROPANE (NEOPENTANE)	0.3	0.03	0.1	0.3	0.14	0.1	0.2	0.05	0.1	0.3	0.06		0.09
PROPYLENE	1.4	0.12	5.8	0.0	0.00	0.0	0.0	0.00	0.0	0.3	0.08		1.16
1,3-BUTADIENE	1.6	0.15	17.9	0.0	0.00	0.0	0.0	0.00	0.0	0.3	0.08		3.70
2-METHYLPROPANE (ISOBUTANE)	17.7	1.60	21.4	9.7	5.46	11.8	12.0	2.52	14.5	12.0	2.65		14.50
1-BUTYNE	1.3	0.11	11.7	0.5	0.27	4.4	0.6	0.12	5.4	0.7	0.15		6.18
METHANOL	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00		0.00
CIS-2-BUTENE	6.5	0.58	64.3	0.2	0.10	1.7	3.5	0.74	35.1	2.4	0.53		23.79
3-METHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00		0.00
ETHANOL	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00		0.00
2-METHYLBUTANE (ISOPENTANE)	105.1	9.47	145.0	38.4	21.54	53.0	57.1	12.00	78.8	57.3	12.67		79.05
2-BUTYNE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00		0.00
1-PENTENE	0.7	0.06	4.1	0.0	0.00	0.0	0.1	0.03	0.7	0.2	0.04		1.06
2-METHYL-1-BUTENE	0.7	0.06	3.4	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.03		0.70
PENTANE	20.6	1.85	21.4	7.6	4.27	7.9	11.0	2.32	11.5	11.2	2.48		11.68
UNIDENTIFIED C5 OLEFINS	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00		0.00
2-METHYL-1,3-BUTADIENE	0.8	0.06	5.9	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.03		1.21
TRANS-2-PENTENE	0.7	0.06	6.0	0.0	0.00	0.0	0.4	0.08	3.5	0.2	0.06		2.20
3,3-DIMETHYL-1-BUTENE	0.2	0.02	0.8	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01		0.18
CIS-2-PENTENE	0.5	0.04	4.3	0.0	0.00	0.0	0.3	0.06	2.3	0.2	0.04		1.52
2-METHYL-2-BUTENE	3.4	0.31	21.8	0.0	0.02	0.2	1.4	0.30	9.2	1.1	0.25		7.15
CYCLOPENTADIENE	0.9	0.08	6.5	0.0	0.00	0.0	0.1	0.03	1.1	0.2	0.06		1.64
2,2-DIMETHYLBUTANE	1.4	0.12	1.1	0.7	0.38	0.6	0.9	0.19	0.7	0.9	0.20		0.72
CYCLOPENTENE	1.0	0.09	7.9	0.0	0.00	0.0	0.6	0.12	4.2	0.4	0.08		2.79
4-METHYL-1-PENTENE	0.3	0.03	1.3	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.01		0.27
3-METHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00		0.00
CYCLOPENTANE	1.8	0.17	4.4	0.5	0.26	1.1	0.9	0.19	2.1	0.9	0.19		2.05
2,3-DIMETHYLBUTANE	5.6	0.50	6.0	1.4	0.81	1.5	2.5	0.54	2.7	2.6	0.57		2.78
MTBE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00		0.00
2,3-DIMETHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00		0.00
4-METHYL-CIS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00		0.00
2-METHYLPENTANE	7.9	0.71	12.1	2.1	1.21	3.3	3.7	0.78	5.7	3.8	0.83		5.76
4-METHYL-TRANS-2-PENTENE	0.5	0.04	3.2	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02		0.66
3-METHYLPENTANE	4.3	0.39	6.5	1.0	0.55	1.5	1.9	0.40	2.9	1.9	0.42		2.92
2-METHYL-1-PENTENE	0.2	0.02	0.8	0.0	0.00	0.0	0.2	0.04	0.8	0.1	0.02		0.37
1-HEXENE	0.3	0.02	1.2	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.01		0.24
HEXANE	5.9	0.53	5.8	1.7	0.94	1.6	2.9	0.60	2.8	2.9	0.64		2.83
UNIDENTIFIED C6 OLEFINS	0.5	0.05	3.6	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02		0.75
TRANS-3-HEXENE	0.1	0.01	1.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01		0.21
CIS-3-HEXENE	0.3	0.03	1.9	0.0	0.00	0.0	0.2	0.03	1.0	0.1	0.02		0.67
TRANS-2-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00		0.00
3-METHYL-TRANS-2-PENTENE	0.4	0.04	2.8	0.0	0.00	0.0	0.2	0.04	1.4	0.1	0.03		0.96
2-METHYL-2-PENTENE	0.4	0.04	3.0	0.0	0.00	0.0	0.2	0.03	1.0	0.1	0.03		0.89
3-METHYLCYCLOPENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00		0.00
CIS-2-HEXENE	0.2	0.02	1.2	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01		0.25
ETBE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00		0.00
3-METHYL-CIS-2-PENTENE	0.3	0.03	2.2	0.0	0.00	0.0	0.2	0.04	1.3	0.1	0.03		0.81
2,2-DIMETHYLPENTANE	2.0	0.18	2.8	0.3	0.19	0.5	0.8	0.17	1.1	0.8	0.18		1.14
METHYLCYCLOPENTANE	2.0	0.18	5.6	0.3	0.19	0.9	0.8	0.17	2.2	0.8	0.18		2.25
2,4-DIMETHYLPENTANE	5.3	0.47	9.4	1.0	0.57	1.8	2.5	0.53	4.5	2.3	0.51		4.11
2,3,3-TRIMETHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00		0.00
2,2,3-TRIMETHYLBUTANE	0.5	0.04	0.6	0.2	0.13	0.3	0.2	0.04	0.3	0.3	0.06		0.38
3,4-DIMETHYL-1-PENTENE	0.4	0.03	1.3	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02		0.27
1-METHYLCYCLOPENTENE	0.2	0.02	1.1	0.0	0.00	0.0	0.1	0.03	0.8	0.1	0.02		0.45
BENZENE	63.5	5.72	26.7	7.3	4.11	3.1	28.0	5.88	11.7	24.6	5.44		10.32
3-METHYL-1-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00		0.00
3,3-DIMETHYLPENTANE	0.5	0.05	0.4	0.2	0.11	0.1	0.3	0.06	0.2	0.3	0.07		0.21
CYCLOHEXANE	3.8	0.34	4.9	0.0	0.00	0.0	1.7	0.35	2.1	1.2	0.27		1.59
2-METHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00		0.00
2,3-DIMETHYLPENTANE	2.8	0.25	4.3	0.7	0.41	1.1	1.2	0.26	1.9	1.3	0.29		1.97
1,1-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00		0.00
CYCLOHEXENE	0.2	0.01	0.9	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01		0.19

3-METHYLHEXANE	1.3	0.12	1.9	0.3	0.19	0.5	0.7	0.14	0.9	0.6	0.14	0.89
CIS-1,3-DIMETHYLCYCLOPENTANE	0.3	0.03	0.8	0.0	0.00	0.0	0.1	0.02	0.3	0.1	0.02	0.23
3-ETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,2-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,3-DIMETHYLCYCLOPENTANE	0.2	0.02	0.6	0.0	0.00	0.0	0.1	0.02	0.3	0.1	0.02	0.20
1-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,4-TRIMETHYLPENTANE	94.0	8.47	87.4	24.2	13.61	22.5	52.3	11.01	48.7	46.4	10.25	43.12
2-METHYL-1-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-3-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEPTANE	1.5	0.13	1.2	0.4	0.21	0.3	0.8	0.16	0.6	0.7	0.16	0.57
CIS-3-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNIDENTIFIED C7	2.7	0.24	12.0	0.0	0.00	0.0	1.2	0.25	5.4	0.9	0.20	3.97
2-METHYL-2-HEXENE	0.1	0.01	0.7	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.14
3-METHYL-TRANS-3-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-ETHYL-CIS-2-PENTENE	0.2	0.01	0.9	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.19
2,4,4-TRIMETHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,4-TRIMETHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYL-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-HEPTENE	0.2	0.02	1.2	0.0	0.00	0.0	0.1	0.03	0.8	0.1	0.02	0.46
METHYLCYCLOHEXANE	1.9	0.18	3.6	0.2	0.12	0.4	0.9	0.19	1.6	0.8	0.17	1.40
CIS-1,2-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,1,3-TRIMETHYLCYCLOPENTANE	0.2	0.02	0.3	0.0	0.00	0.0	0.1	0.02	0.2	0.1	0.01	0.13
2,4,4-TRIMETHYL-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,3-TRIMETHYLPENTANE	11.2	1.01	13.4	2.4	1.36	2.9	5.6	1.18	6.8	5.1	1.13	8.12
2,5-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLHEXANE	16.0	1.44	24.0	1.6	0.89	2.4	7.2	1.51	10.8	6.1	1.35	9.16
1-TRANS-2-CIS-4-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,3-DIMETHYLHEXANE	0.3	0.03	0.3	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.01	0.07
1-TRANS-2-CIS-3-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3,4-TRIMETHYLPENTANE	17.9	1.62	28.7	2.9	1.63	4.6	8.8	1.86	14.2	7.6	1.69	12.21
2,3,3-TRIMETHYLPENTANE	25.0	2.25	30.0	5.0	2.79	8.0	13.1	2.78	15.7	11.3	2.51	13.61
TOLUENE	252.2	22.72	688.4	11.2	6.29	30.6	84.1	17.70	229.7	81.0	17.91	221.11
2,3-DIMETHYLHEXANE	10.4	0.94	13.7	0.0	0.00	0.0	3.3	0.70	4.4	3.1	0.68	4.04
1,1,2-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLHEPTANE	1.6	0.15	1.6	0.2	0.12	0.2	0.0	0.00	0.0	0.4	0.10	0.43
3,4-DIMETHYLHEXANE	2.2	0.20	2.7	0.3	0.17	0.4	1.0	0.22	1.2	0.9	0.20	1.09
2,2,4,4-TETRAMETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-AND-TRANS-3,4-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-METHYLHEPTANE	0.4	0.04	0.5	0.0	0.00	0.0	0.7	0.15	0.8	0.3	0.06	0.33
2-METHYL-3-ETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-3-ETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYLHEPTANE	0.9	0.08	0.9	0.2	0.09	0.2	0.5	0.10	0.4	0.4	0.08	0.38
1-CIS,2-TRANS,3-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1,3-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,4-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-ETHYLHEXANE	0.3	0.03	0.4	0.0	0.00	0.0	0.2	0.04	0.2	0.1	0.03	0.14
2,2,5-TRIMETHYLHEXANE	8.2	0.74	8.0	1.2	0.66	1.1	3.9	0.81	3.7	3.4	0.74	3.27
TRANS-1-METHYL-3-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1-METHYL-3-ETHYLCYCLOPENTANE	0.1	0.01	0.2	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.04
1,1-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1-METHYL-2-ETHYLCYCLOPENTANE	0.2	0.02	0.4	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.09
1-METHYL-1-ETHYL-CYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4,4-TRIMETHYLHEXANE	0.3	0.03	0.4	0.0	0.00	0.0	0.2	0.03	0.2	0.1	0.03	0.13
2,2,4-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,2-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-4-OCTENE	0.1	0.01	0.6	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.13
OCTANE	0.4	0.04	0.3	0.0	0.00	0.0	0.2	0.04	0.1	0.1	0.03	0.09
UNIDENTIFIED C8	0.1	0.01	0.4	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.09
TRANS-2-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,3-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1,4-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ISOPROPYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3,5-TRIMETHYLHEXANE	1.1	0.10	1.2	0.0	0.00	0.0	0.5	0.11	0.6	0.4	0.08	0.41
CIS-1-METHYL-2-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-2-ETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLHEPTANE	1.4	0.13	1.9	1.4	0.78	1.9	4.4	0.93	6.0	2.2	0.49	2.98
4,4-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1,2-DIMETHYLCYCLOHEXANE	0.2	0.01	0.3	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.06
PROPYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
PROPYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-4-ETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,6-DIMETHYLHEPTANE	0.2	0.01	0.2	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.04
1,1,3-TRIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,5-DIMETHYLHEPTANE	0.3	0.02	0.3	0.0	0.00	0.0	0.1	0.02	0.1	0.1	0.02	0.09
3,3-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00

3,5-DIMETHYLHEPTANE	0.3	0.02	0.3	0.0	0.00	0.0	0.1	0.02	0.1	0.1	0.02	0.09
ETHYLBENZENE	7.9	0.71	21.2	0.3	0.15	0.7	3.3	0.68	8.8	2.7	0.59	7.17
2,3,4-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
m- & p-XYLENE	11.5	1.04	85.2	0.7	0.38	5.0	4.5	0.94	33.0	4.0	0.88	29.27
4-METHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,4-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-ETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLOCTANE	0.3	0.02	0.3	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.01	0.06
3-METHYLOCTANE	0.1	0.01	0.1	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.03
STYRENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
o-XYLENE	6.1	0.55	39.7	0.4	0.21	2.4	2.2	0.46	14.1	2.1	0.46	13.31
1-NONENE	0.4	0.04	1.0	0.7	0.39	1.6	0.2	0.04	0.4	0.5	0.11	1.12
TRANS-3-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-3-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
NONANE	0.4	0.03	0.2	0.0	0.00	0.0	0.2	0.04	0.1	0.1	0.03	0.07
TRANS-2-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ISOPROPYLBENZENE (CUMENE)	1.2	0.11	2.8	0.0	0.00	0.0	0.3	0.07	0.7	0.3	0.08	0.77
2,2-DIMETHYLOCTANE	0.2	0.02	0.2	0.0	0.00	0.0	0.1	0.02	0.1	0.1	0.02	0.08
2,4-DIMETHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
n-PROPYLBENZENE	4.9	0.44	10.4	0.0	0.00	0.0	1.1	0.23	2.3	1.3	0.29	2.79
1-METHYL-3-ETHYLBENZENE	22.8	2.05	164.0	0.0	0.00	0.0	6.2	1.31	44.8	6.4	1.42	46.19
1-METHYL-4-ETHYLBENZENE	9.9	0.89	71.0	0.3	0.18	2.3	2.9	0.82	21.1	3.0	0.67	21.68
1,3,5-TRIMETHYLBENZENE	11.2	1.01	113.2	0.4	0.25	4.5	3.2	0.67	32.3	3.4	0.76	34.58
1-METHYL-2-ETHYLBENZENE	8.4	0.76	60.7	0.2	0.12	1.6	2.2	0.47	18.2	2.5	0.55	17.79
1,2,4-TRIMETHYLBENZENE	32.6	2.93	287.5	0.6	0.34	5.3	7.9	1.66	69.6	9.2	2.03	81.23
TERT-BUTYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-DECENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
DECANE	1.0	0.09	0.5	0.7	0.38	0.3	1.8	0.38	0.8	1.1	0.23	0.49
ISOBUTYLBENZENE	0.8	0.07	1.5	0.6	0.36	1.2	1.7	0.35	3.1	1.0	0.21	1.79
METHYLPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
BUTYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-DIMETHYL-5-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
S-BUTYLBENZENE	0.5	0.04	0.9	0.0	0.00	0.0	0.2	0.04	0.3	0.1	0.03	0.27
1-METHYL-3-ISOPROPYLBENZENE	5.3	0.48	31.0	0.0	0.00	0.0	1.3	0.28	7.7	1.5	0.32	8.51
1,2,3-TRIMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-4-ISOPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
INDAN	3.7	0.33	3.9	0.2	0.10	0.2	1.0	0.22	1.1	1.1	0.25	1.22
1-METHYL-2-ISOPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-DIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,4-DIETHYLBENZENE	1.9	0.17	12.2	0.0	0.00	0.0	0.6	0.12	3.7	0.5	0.12	3.53
1-METHYL-3-N-PROPYLBENZENE	1.5	0.13	9.5	0.0	0.00	0.0	0.3	0.06	1.8	0.4	0.08	2.46
1-METHYL-4-N-PROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2-DIETHYLBENZENE	2.2	0.20	14.3	0.0	0.00	0.0	0.6	0.12	3.6	0.6	0.14	3.94
1-METHYL-2-N-PROPYLBENZENE	1.1	0.09	6.8	0.0	0.00	0.0	0.3	0.06	1.9	0.3	0.07	1.93
1,4-DIMETHYL-2-ETHYLBENZENE	0.9	0.08	7.8	0.0	0.00	0.0	0.2	0.05	1.9	0.2	0.05	2.14
1,3-DIMETHYL-4-ETHYLBENZENE	0.8	0.07	6.9	0.0	0.00	0.0	0.0	0.00	0.0	0.2	0.03	1.43
1,2-DIMETHYL-4-ETHYLBENZENE	1.0	0.09	9.4	0.0	0.00	0.0	0.4	0.08	3.3	0.3	0.07	2.83
1,3-DIMETHYL-2-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNDECANE	1.0	0.09	0.4	0.0	0.00	0.0	0.2	0.04	0.1	0.3	0.06	0.11
1,2-DIMETHYL-3-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,4,5-TETRAMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLBUTYLBENZENE (sec AMYLBENZENE)	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,4-DIMETHYLCUMENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,3,5-TETRAMETHYLBENZENE	0.3	0.03	2.8	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.01	0.58
TERT-1-BUT-2-METHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,3,4-TETRAMETHYLBENZENE	0.1	0.01	1.1	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.23
N-PENT-BENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TERT-1-BUT-3,5-DIMETHYLBENZENE	0.4	0.03	2.6	0.4	0.22	2.9	1.0	0.21	7.3	0.5	0.12	4.05
TERT-1-BUTYL-4-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
NAPHTHALENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
DODECANE	0.7	0.07	0.3	0.0	0.00	0.0	0.0	0.00	0.0	0.2	0.03	0.06
1,3,5-TRIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,4-TRIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEXYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNIDENTIFIED C9-C12+	12.9	1.16	49.1	0.0	0.00	0.0	1.7	0.36	6.6	3.1	0.69	11.95
FORMALDEHYDE	13.9	1.25	99.3	1.5	0.86	10.9	4.1	0.86	29.2	4.8	1.06	34.18
ACETALDEHYDE	3.8	0.35	21.2	0.1	0.03	0.3	1.7	0.35	9.3	1.3	0.28	7.07
ACROLEIN	1.1	0.10	7.7	0.0	0.00	0.0	0.0	0.00	0.0	0.2	0.05	1.60
ACETONE	2.7	0.24	1.5	0.4	0.23	0.2	1.8	0.38	1.0	1.3	0.28	0.70
PROIONALDEHYDE	0.1	0.01	0.7	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.15
CROTONALDEHYDE	0.4	0.04	2.3	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02	0.47
ISOBUTYRALDEHYDE	0.3	0.03	1.8	0.0	0.00	0.0	0.0	0.01	0.1	0.1	0.02	0.40
METHYL ETHYL KETONE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.0	0.0	0.00	0.01
BENZALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.5	0.10	-0.3	0.1	0.03	-0.07
HEXANALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00

TEST NUMBER: G72038FTP20K  
 TEST CAR: 1995 F150 PICKUP #38  
 TEST DATE: 8/4/97  
 TEST FUEL: EEE

COMPOUND	BAG 1	BAG 1	BAG 1	BAG 2	BAG 2	BAG 2	BAG 3	BAG 3	BAG 3	FTP		FTP
	WEIGHT MG/MI	WEIGHT NMOG %	OZONE, MG/MI	WEIGHT MG/MI	WEIGHT NMOG %	OZONE MG/MI	WEIGHT MG/MI	WEIGHT NMOG %	OZONE MG/MI	FTP MG/MI	FTP WEIGHT NMOG %	FTP OZONE MG/MI
METHANE	127.2		1.9	115.4		1.7	89.7		1.3	110.8		1.64
ETHANE	22.0	2.33	5.5	18.2	25.19	4.5	18.8	5.96	4.7	19.1	5.99	4.78
ETHYLENE	59.5	6.31	434.1	0.6	0.84	4.4	19.8	6.29	144.4	18.1	5.66	131.81
PROPANE	1.1	0.12	0.5	0.6	0.82	0.3	1.2	0.39	0.6	0.9	0.27	0.42
PROPYLENE	32.9	3.48	309.0	0.1	0.16	1.1	9.4	2.98	88.1	9.4	2.96	88.75
ACETYLENE	13.5	1.43	6.7	0.0	0.00	0.0	0.0	0.00	0.0	2.8	0.88	1.40
PROPADIENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
BUTANE	10.3	1.10	10.5	3.4	4.73	3.5	6.2	1.96	6.3	5.6	1.75	5.71
TRANS-2-BUTENE	3.8	0.41	38.1	0.0	0.00	0.0	2.1	0.66	20.5	1.4	0.43	13.52
1-BUTENE	5.3	0.56	46.8	0.0	0.00	0.0	1.0	0.31	8.7	1.4	0.43	12.10
2-METHYLPROPENE (ISOBUTYLENE)	30.6	3.24	162.3	0.1	0.20	0.8	8.4	2.68	44.7	8.7	2.73	46.30
2,2-DIMETHYLPROPANE (NEOPENTANE)	0.2	0.02	0.1	0.1	0.17	0.0	0.1	0.05	0.1	0.1	0.05	0.05
PROPYNE	0.9	0.09	3.7	0.0	0.00	0.0	0.0	0.00	0.0	0.2	0.06	0.76
1,3-BUTADIENE	1.6	0.17	17.2	0.0	0.00	0.0	0.0	0.00	0.0	0.3	0.10	3.56
2-METHYLPROPANE (ISOBUTANE)	10.3	1.09	12.5	3.4	4.77	4.2	6.4	2.04	7.8	5.7	1.78	6.87
1-BUTYNE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
METHANOL	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-BUTENE	4.8	0.51	47.6	0.0	0.00	0.0	1.8	0.56	17.4	1.5	0.46	14.84
3-METHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHANOL	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLBUTANE (ISOPENTANE)	82.8	8.77	114.2	17.3	24.02	23.9	42.0	13.34	57.9	37.8	11.79	51.95
2-BUTYNE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-PENTENE	0.8	0.08	4.9	0.0	0.00	0.0	0.0	0.00	0.0	0.2	0.05	1.02
2-METHYL-1-BUTENE	2.1	0.22	10.4	0.0	0.00	0.0	0.4	0.13	2.0	0.5	0.17	2.69
PENTANE	14.9	1.58	15.5	2.9	3.96	3.0	7.0	2.23	7.3	6.5	2.04	6.76
UNIDENTIFIED C5 OLEFINS	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-1,3-BUTADIENE	0.8	0.08	7.1	0.0	0.00	0.0	0.0	0.00	0.0	0.2	0.05	1.48
TRANS-2-PENTENE	0.7	0.07	6.1	0.0	0.00	0.0	0.3	0.09	2.6	0.2	0.07	1.96
3,3-DIMETHYL-1-BUTENE	0.3	0.03	1.2	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02	0.25
CIS-2-PENTENE	0.5	0.05	4.4	0.0	0.00	0.0	0.2	0.05	1.4	0.1	0.05	1.30
2-METHYL-2-BUTENE	4.3	0.46	27.7	0.3	0.42	2.0	1.7	0.53	10.7	1.5	0.47	9.68
TERT-BUTANOL	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CYCLOPENTADIENE	0.9	0.10	6.9	0.0	0.00	0.0	0.0	0.00	0.0	0.2	0.06	1.42
2,2-DIMETHYLBUTANE	1.6	0.17	1.3	0.5	0.74	0.4	0.9	0.29	0.7	0.9	0.27	0.70
CYCLOPENTENE	1.1	0.12	8.8	0.0	0.00	0.0	0.4	0.11	2.7	0.3	0.10	2.55
4-METHYL-1-PENTENE	0.5	0.05	2.1	0.2	0.31	1.0	0.0	0.00	0.0	0.2	0.07	0.95
3-METHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CYCLOPENTANE	1.1	0.12	2.7	0.0	0.00	0.0	0.5	0.16	1.2	0.4	0.12	0.89
2,3-DIMETHYLBUTANE	6.1	0.64	6.5	0.9	1.28	1.0	2.6	0.82	2.8	2.4	0.77	2.62
MTBE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-METHYL-CIS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLPENTANE	8.4	0.90	12.9	0.8	1.07	1.2	3.6	1.13	5.5	3.1	0.98	4.79
4-METHYL-TRANS-2-PENTENE	0.3	0.03	2.0	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02	0.42
3-METHYLPENTANE	4.8	0.51	7.3	0.5	0.85	0.7	1.9	0.60	2.9	1.8	0.55	2.68
2-METHYL-1-PENTENE	0.1	0.01	0.4	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.09
1-HEXENE	0.4	0.04	1.7	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02	0.35
HEXANE	5.0	0.53	4.9	0.4	0.62	0.4	2.0	0.64	2.0	1.8	0.57	1.78
UNIDENTIFIED C6 OLEFINS	0.9	0.09	5.9	0.0	0.00	0.0	0.1	0.03	0.7	0.2	0.07	1.39
TRANS-3-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-3-HEXENE	0.1	0.01	0.6	0.0	0.00	0.0	0.1	0.03	0.7	0.0	0.02	0.33
DIISOPROPYL ETHER	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-HEXENE	0.2	0.02	1.4	0.0	0.00	0.0	0.2	0.05	1.0	0.1	0.03	0.57
3-METHYL-TRANS-2-PENTENE	0.3	0.03	1.9	0.0	0.00	0.0	0.2	0.05	1.0	0.1	0.03	0.68
2-METHYL-2-PENTENE	0.6	0.06	3.8	0.0	0.00	0.0	0.1	0.05	1.0	0.2	0.05	1.04
3-METHYLCYCLOPENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-HEXENE	0.2	0.02	1.5	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.31
ETBE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-CIS-2-PENTENE	0.2	0.02	1.4	0.2	0.29	1.4	0.0	0.00	0.0	0.1	0.05	1.00
2,2-DIMETHYLPENTANE, NOTE A	2.2	0.23	3.0	0.0	0.00	0.0	0.8	0.27	1.2	0.7	0.21	0.95
METHYLCYCLOPENTANE, NOTE A	2.1	0.22	6.0	0.0	0.00	0.0	0.8	0.26	2.3	0.7	0.21	1.88
2,4-DIMETHYLPENTANE	5.7	0.60	10.1	0.3	0.48	0.8	2.2	0.70	3.9	2.0	0.61	3.48
2,2,3-TRIMETHYLBUTANE	0.4	0.05	0.6	0.2	0.22	0.2	0.2	0.07	0.3	0.2	0.07	0.31
3,4-DIMETHYL-1-PENTENE	0.2	0.02	0.5	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.11
1-METHYLCYCLOPENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
BENZENE	37.3	3.95	15.6	1.1	1.55	0.5	12.0	3.82	5.1	11.6	3.63	4.87
3-METHYL-1-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,3-DIMETHYLPENTANE	0.2	0.02	0.2	0.2	0.32	0.2	0.0	0.01	0.0	0.2	0.05	0.12
CYCLOHEXANE	2.8	0.30	3.6	0.0	0.00	0.0	1.1	0.36	1.5	0.9	0.28	1.15
2-METHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYLPENTANE	4.9	0.52	7.4	0.2	0.31	0.3	1.8	0.56	2.7	1.6	0.50	2.43
1,1-DIMETHYLCYCLOPENTANE	0.2	0.02	0.3	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.07
TERT-AMYL METHYL ETHER	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CYCLOHEXENE	0.2	0.02	1.1	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.22



3-METHYLHEXANE	1.3	0.14	1.9	0.0	0.07	0.1	0.5	0.15	0.7	0.4	0.14	0.61
CIS-1,3-DIMETHYLCYCLOPENTANE	0.3	0.03	0.8	0.0	0.00	0.0	0.1	0.04	0.3	0.1	0.03	0.28
3-ETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,2-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,3-DIMETHYLCYCLOPENTANE	0.3	0.03	0.7	0.0	0.00	0.0	0.1	0.03	0.2	0.1	0.02	0.20
1-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,4-TRIMETHYLPENTANE	115.0	12.19	107.0	11.8	16.39	11.0	49.0	15.58	45.6	43.4	13.60	40.36
2-METHYL-1-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-3-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEPTANE	1.6	0.17	1.3	0.2	0.23	0.1	0.5	0.17	0.4	0.6	0.18	0.46
CIS-3-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNIDENTIFIED C7	1.1	0.11	4.8	0.0	0.00	0.0	0.1	0.05	0.7	0.3	0.08	1.18
2-METHYL-2-HEXENE	0.1	0.01	0.6	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.13
3-METHYL-TRANS-3-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-ETHYL-CIS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4,4-TRIMETHYL-1-PENTENE	0.1	0.01	0.3	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.07
2,3-DIMETHYL-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-HEPTENE	0.2	0.03	1.3	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02	0.28
METHYLCYCLOHEXANE	2.3	0.24	4.2	0.0	0.03	0.0	0.8	0.25	1.4	0.7	0.22	1.29
CIS-1,2-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,1,3-TRIMETHYLCYCLOPENTANE	0.1	0.01	0.3	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.06
2,4,4-TRIMETHYL-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,3-TRIMETHYLPENTANE	11.3	1.20	13.6	0.6	0.77	0.7	3.0	0.94	3.6	3.5	1.08	4.14
2,5-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLHEXANE	10.9	1.16	16.4	0.8	1.07	1.2	5.2	1.64	7.7	4.1	1.28	6.12
1-TRANS-2-CIS-4-TRIMETHYLCYCLOPENTANE	0.2	0.02	0.3	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.07
3,3-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-TRANS-2-CIS-3-TRIMETHYLCYCLOPENTANE	0.1	0.01	0.2	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.04
2,3,4-TRIMETHYLPENTANE	20.7	2.20	33.2	1.2	1.69	1.9	7.9	2.50	12.6	7.1	2.22	11.34
2,3,3-TRIMETHYLPENTANE	24.7	2.62	29.6	2.0	2.84	2.5	10.3	3.26	12.3	9.0	2.82	10.79
TOLUENE	219.6	23.27	599.4	0.2	0.26	0.5	50.5	16.04	137.8	59.4	18.62	162.24
2,3-DIMETHYLHEXANE	11.8	1.25	15.6	0.0	0.00	0.0	3.0	0.95	3.9	3.3	1.02	4.31
1,1,2-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLHEPTANE	0.9	0.09	0.8	0.0	0.00	0.0	0.3	0.09	0.3	0.3	0.08	0.24
3,4-DIMETHYLHEXANE, NOTE B	1.8	0.19	2.4	0.0	0.00	0.0	0.7	0.21	0.9	0.5	0.17	0.74
4-METHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYLHEPTANE	0.6	0.06	0.5	0.0	0.00	0.0	0.3	0.11	0.3	0.2	0.06	0.20
1-CIS-2-TRANS-3-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1,3-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,4-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-ETHYLHEXANE	0.1	0.01	0.1	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.03
2,2,5-TRIMETHYLHEXANE	7.7	0.82	7.5	0.4	0.80	0.4	2.7	0.88	2.6	2.6	0.80	2.49
TRANS-1-METHYL-3-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1-METHYL-3-ETHYLCYCLOPENTANE	0.2	0.02	0.4	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.07
1,1-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1-METHYL-2-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-1-ETHYL-CYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4,4-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,4-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,2-DIMETHYLCYCLOHEXANE	0.2	0.02	0.5	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.02	0.09
1-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-4-OCTENE	0.2	0.02	1.2	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.25
OCTANE	0.5	0.06	0.3	0.0	0.00	0.0	0.2	0.05	0.1	0.2	0.05	0.09
UNIDENTIFIED C8	0.2	0.03	0.8	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.02	0.17
TRANS-2-OCTENE	0.4	0.05	2.3	0.0	0.00	0.0	0.1	0.04	0.6	0.1	0.04	0.64
TRANS-1,3-DIMETHYLCYCLOHEXANE, NOTE C	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ISOPROPYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3,5-TRIMETHYLHEXANE	1.0	0.10	1.1	0.0	0.00	0.0	0.3	0.10	0.4	0.3	0.09	0.33
CIS-1-METHYL-2-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLHEPTANE	0.2	0.02	0.3	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.06
4,4-DIMETHYLHEPTANE	0.3	0.03	0.4	0.0	0.00	0.0	0.2	0.06	0.2	0.1	0.04	0.14
CIS-1,2-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,6-DIMETHYLHEPTANE, NOTE D	0.3	0.03	0.4	0.0	0.00	0.0	0.1	0.04	0.1	0.1	0.03	0.12
1,1,3-TRIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,5-DIMETHYLHEPTANE, NOTE E	0.4	0.04	0.4	0.0	0.00	0.0	0.2	0.05	0.2	0.1	0.04	0.14
3,3-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,5-DIMETHYLHEPTANE, NOTE E	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHYLBENZENE	7.2	0.76	19.4	0.0	0.00	0.0	1.9	0.59	5.1	2.0	0.63	5.41
2,3,4-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
m- & p-XYLENE	7.2	0.76	53.2	0.0	0.00	0.0	2.6	0.83	19.3	2.2	0.69	16.32
4-METHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,4-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-ETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLOCTANE	0.2	0.02	0.2	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.04
3-METHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00

STYRENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
O-XYLENE	4.2	0.44	27.0	0.0	0.00	0.0	1.4	0.45	9.3	1.3	0.39	8.13
1-NONENE	0.3	0.04	0.8	0.0	0.00	0.0	0.1	0.04	0.2	0.1	0.03	0.23
TRANS-3-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-3-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
NONANE	0.3	0.03	0.2	0.0	0.00	0.0	0.1	0.03	0.0	0.1	0.03	0.05
TRANS-2-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ISOPROPYLBENZENE (CUMENE)	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
n-PROPYLBENZENE	3.3	0.35	7.0	0.0	0.00	0.0	0.3	0.11	0.7	0.8	0.24	1.66
1-METHYL-3-ETHYLBENZENE	15.4	1.63	110.8	0.0	0.00	0.0	2.4	0.77	17.5	3.9	1.21	27.75
1-METHYL-4-ETHYLBENZENE	6.8	0.72	48.8	0.0	0.00	0.0	0.9	0.30	6.8	1.7	0.52	11.93
1,3,5-TRIMETHYLBENZENE	7.8	0.82	78.7	0.0	0.00	0.0	1.3	0.42	13.3	2.0	0.62	19.95
1-METHYL-2-ETHYLBENZENE	6.1	0.65	44.2	0.0	0.00	0.0	1.1	0.36	8.1	1.6	0.50	11.38
1,2,4-TRIMETHYLBENZENE	24.5	2.60	216.8	0.0	0.00	0.0	0.6	0.20	5.5	5.3	1.65	46.38
TERT-BUTYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-DECENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
DECANE, NOTE F	0.1	0.01	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.01
ISOBUTYLBENZENE, NOTE F	0.1	0.01	0.2	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.04
1,3-DIMETHYL-5-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
METHYLPROPYLBENZENE (sec butylbenzene)	0.3	0.03	0.5	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02	0.11
1-METHYL-3-ISOPROPYLBENZENE	4.8	0.51	28.0	0.0	0.00	0.0	0.2	0.06	1.1	1.0	0.33	6.11
1,2,3-TRIMETHYLBENZENE	0.4	0.04	3.4	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.03	0.71
1-METHYL-4-ISOPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
INDAN	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-2-ISOPROPYLBENZENE	0.2	0.02	1.2	0.0	0.00	0.0	0.3	0.10	1.9	0.1	0.04	0.77
1,3-DIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,4-DIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-3-N-PROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-4-N-PROPYLBENZENE, NOTE G	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2-DIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-2-N-PROPYLBENZENE	1.1	0.11	8.9	0.0	0.00	0.0	0.2	0.07	1.5	0.3	0.09	1.84
1,4-DIMETHYL-2-ETHYLBENZENE	0.4	0.04	3.7	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.03	0.77
1,3-DIMETHYL-4-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2-DIMETHYL-4-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-DIMETHYL-2-ETHYLBENZENE	0.5	0.05	4.5	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.03	0.93
UNDECANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2-DIMETHYL-3-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,4,5-TETRAMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLBUTYLBENZENE (sec AMYLBENZENE)	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,4-DIMETHYLCUMENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,3,5-TETRAMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TERT-1-BUT-2-METHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,3,4-TETRAMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
N-PENT-BENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TERT-1-BUT-3,5-DIMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TERT-1-BUTYL-4-ETHYLBENZENE	0.3	0.03	1.7	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02	0.35
NAPHTHALENE	0.1	0.01	0.1	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.02
DODECANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3,5-TRIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,4-TRIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEXYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNIDENTIFIED C9-C12+	0.9	0.09	3.3	0.0	0.00	0.0	0.7	0.21	2.6	0.4	0.11	1.39
FORMALDEHYDE	10.8	1.15	77.3	0.5	0.75	3.9	2.0	0.63	14.1	3.1	0.96	21.88
ACETALDEHYDE	3.3	0.35	18.2	0.3	0.39	1.6	1.1	0.34	6.0	1.1	0.35	6.22
ACROLEIN	0.4	0.04	2.6	0.0	0.00	0.0	0.4	0.12	2.6	0.2	0.06	1.27
ACETONE	2.2	0.23	1.2	0.3	0.39	0.2	0.4	0.14	0.2	0.7	0.23	0.40
PROPIONALDEHYDE	0.3	0.03	1.8	0.0	0.00	0.0	0.3	0.09	1.8	0.1	0.04	0.87
CROTONALDEHYDE	0.2	0.03	1.4	0.0	0.00	0.0	0.3	0.10	1.7	0.1	0.04	0.73
ISOBUTYRALDEHYDE, NOTE H	0.1	0.01	0.3	0.0	0.00	0.0	0.1	0.03	0.4	0.0	0.01	0.18
METHYL ETHYL KETONE, NOTE H	0.1	0.01	0.1	0.0	0.00	0.0	0.1	0.03	0.1	0.0	0.01	0.04
BENZALDEHYDE	2.9	0.31	-1.6	0.6	0.88	-0.3	0.0	0.00	0.0	0.9	0.29	-0.51
ISOVALERALDEHYDE	0.6	0.06	2.7	0.4	0.50	1.6	0.6	0.19	2.7	0.5	0.15	2.12
VALERALDEHYDE	0.1	0.01	0.2	0.0	0.00	0.0	0.2	0.06	0.9	0.1	0.02	0.29
O-TOLUALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
MP-TOLUALDEHYDE	0.2	0.02	-0.1	0.0	0.00	0.0	0.3	0.10	-0.2	0.1	0.04	-0.07
HEXANALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
DIMETHYLBENZALDEHYDE	0.4	0.04	-0.2	0.0	0.00	0.0	0.5	0.17	-0.3	0.2	0.07	-0.12

A - 2,2-Dimethylpentane and methylcyclopentane co-elutes. GC peak area split equally between the two compounds.

B - 3-Methyl-3-ethyl-pentane co-elutes with reported compound. Not reported separately.

C - Cis-1,4-Dimethylcyclohexane co-elutes with reported compound. Not reported separately.

D - Propylcyclopentane co-elutes with reported compound. Not reported separately.

E - 2,5-Dimethylheptane and 3,5-dimethylheptane co-elutes. GC peak area split equally between the two compounds.

F - Decane and isobutylbenzene co-elutes. GC peak area split equally between the two compounds.

G - n-Butylbenzene co-elutes with reported compound. Not reported separately.

H - Isobutyraldehyde and methyl ethyl ketone co-elutes. LC peak area split equally between the two compounds.

**APPENDIX E**  
**3-BAG CNG/GASOLINE TOTAL SPECIES AND**  
**COMPOSITE FTP TEST RESULTS**  
**ON VEHICLE NO. 72051**  
**AT 4,000- 10,000- AND 20,000-MILE INTERVALS**





TEST NUMBER: G72051FTP4K  
 TEST CAR: 1995 FORD F-150 PICKUP #51  
 TEST DATE: 12/14/95  
 TEST FUEL: CNG

COMPOUND	BAG 1	BAG 1	BAG 1	BAG 2	BAG 2	BAG 2	BAG 3	BAG 3	BAG 3	FTP		
	MG/M	WEIGHT NMKG % WEIGHT	OZONE, MG/M OZONE,	MG/M	WEIGHT NMKG % WEIGHT	OZONE MG/M OZONE	MG/M	WEIGHT NMKG % WEIGHT	OZONE MG/M OZONE	MG/M FTP	WEIGHT NMKG % WEIGHT	OZONE MG/M OZONE
METHANE	1894.9		28.0	2696.5		39.9	2307.8		34.2	2424.7		35.89
ETHANE	87.9	60.26	22.0	100.0	85.90	25.0	0.0	0.00	0.0	70.0	69.59	17.50
ETHYLENE	10.9	7.50	79.7	0.0	0.00	0.0	6.0	16.36	43.8	3.9	3.89	28.54
PROPANE	12.1	8.27	5.8	9.8	8.28	4.8	14.4	39.27	6.9	11.4	11.38	5.49
PROPYLENE	1.8	1.11	15.3	0.0	0.00	0.0	0.7	1.86	6.4	0.5	0.52	4.92
ACETYLENE	0.1	0.04	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.01
PROPADIENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
BUTANE	2.8	1.94	2.9	1.8	1.52	1.8	3.4	9.27	3.5	2.4	2.42	2.49
TRANS-2-BUTENE	0.2	0.11	1.8	0.0	0.00	0.0	0.5	1.45	5.3	0.2	0.18	1.78
1-BUTENE	0.4	0.24	3.1	0.0	0.00	0.0	0.2	0.59	1.9	0.1	0.13	1.18
2-METHYLPROPENE (ISOBUTYLENE)	0.3	0.22	1.7	0.0	0.01	0.0	0.3	0.68	1.3	0.1	0.14	0.74
2,2-DIMETHYLPROPANE (NEOPENTANE)	0.0	0.01	0.0	0.0	0.00	0.0	0.4	1.20	0.2	0.1	0.12	0.06
PROPYLE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-BUTADIENE	0.3	0.24	3.8	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.07	0.78
2-METHYLPROPANE (ISOBUTANE)	1.8	1.25	2.2	0.9	0.81	1.1	2.9	7.97	3.5	1.7	1.66	2.02
1-BUTYNE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
METHANOL	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-BUTENE	0.1	0.09	1.4	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.03	0.28
3-METHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHANOL	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLBUTANE (ISOPENTANE)	5.2	3.54	7.1	0.4	0.33	0.5	3.4	9.32	4.7	2.2	2.19	3.04
2-BUTYNE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
PENTANE	0.8	0.56	0.9	0.2	0.16	0.2	0.6	1.66	0.6	0.4	0.43	0.45
UNIDENTIFIED C5 OLEFINS	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-1,3-BUTADIENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,3-DIMETHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-2-BUTENE	0.0	0.03	0.3	0.0	0.00	0.0	0.0	0.10	0.2	0.0	0.02	0.12
CYCLOPENTADIENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLBUTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CYCLOPENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-METHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYLBUTANE	0.3	0.19	0.3	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.06	0.06
MTBE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-METHYL-CIS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLPENTANE	0.5	0.35	0.8	0.0	0.00	0.0	0.2	0.60	0.3	0.2	0.17	0.28
4-METHYL-TRANS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYLPENTANE	0.2	0.13	0.3	0.9	0.76	1.3	0.6	1.72	1.0	0.7	0.66	1.01
2-METHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEXANE	0.5	0.33	0.5	0.0	0.00	0.0	0.2	0.59	0.2	0.2	0.16	0.16
UNIDENTIFIED C6 OLEFINS	0.2	0.16	1.6	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.05	0.33
TRANS-3-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-3-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-TRANS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYLCYCLOPENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETBE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-CIS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLPENTANE	0.1	0.06	0.1	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.02	0.02
METHYLCYCLOPENTANE	0.1	0.05	0.2	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.02	0.05
2,4-DIMETHYLPENTANE	0.3	0.21	0.6	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.06	0.11
2,3,3-TRIMETHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,3-TRIMETHYLBUTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,4-DIMETHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYLCYCLOPENTENE	0.4	0.31	2.5	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.09	0.52
BENZENE	0.4	0.29	0.2	0.0	0.00	0.0	0.2	0.64	0.1	0.2	0.15	0.06
3-METHYL-1-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,3-DIMETHYLPENTANE	0.2	0.11	0.1	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.03	0.02
CYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYLPENTANE	0.2	0.13	0.3	0.0	0.00	0.0	0.0	0.09	0.1	0.0	0.05	0.07
1,1-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CYCLOHEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00

3-METHYLHEXANE	0.2	0.16	0.3	0.3	0.28	0.5	0.0	0.00	0.0	0.2	0.22	0.30
CIS-1,3-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-ETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,2-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,3-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,4-TRIMETHYLPENTANE	3.0	2.09	2.8	0.0	0.00	0.0	0.6	1.70	0.6	0.8	0.80	0.75
2-METHYL-1-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-3-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-3-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNIDENTIFIED C7	0.0	0.00	0.0	0.0	0.00	0.0	0.2	0.41	0.7	0.0	0.04	0.19
2-METHYL-2-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-TRANS-3-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-ETHYL-CIS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4,4-TRIMETHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,4-TRIMETHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYL-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
METHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1,2-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLHEXANE	0.4	0.28	0.5	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.08	0.10
1,1,3-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4,4-TRIMETHYL-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,3-TRIMETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,5-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLHEXANE	0.4	0.25	0.5	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.08	0.11
1-TRANS-2-CIS-4-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,3-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-TRANS-2-CIS-3-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3,4-TRIMETHYLPENTANE	0.5	0.38	0.9	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.11	0.18
2,3,3-TRIMETHYLPENTANE	0.8	0.53	0.9	0.0	0.00	0.0	0.2	0.51	0.2	0.2	0.21	0.25
TOLUENE	5.8	3.99	15.9	0.0	0.00	0.0	0.0	0.00	0.0	1.2	1.20	3.29
2,3-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,1,2-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,4-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,4,4-TETRAMETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-AND-TRANS-3,4-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-METHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-3-ETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-3-ETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-CIS-2-TRANS-3-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1,3-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,4-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-ETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,5-TRIMETHYLHEXANE	0.2	0.16	0.2	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.05	0.05
TRANS-1-METHYL-3-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1-METHYL-3-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,1-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1-METHYL-2-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-1-ETHYL-CYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4,4-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,4-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,2-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-4-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
OCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNIDENTIFIED C8	0.1	0.10	0.5	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.03	0.11
TRANS-2-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,3-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1,4-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ISOPROPYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3,5-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1-METHYL-2-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-2-ETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLHEPTANE	0.3	0.21	0.4	1.7	1.47	2.3	0.5	1.38	0.7	1.1	1.08	1.48
4,4-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1,2-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
PROPYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
PROPYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-4-ETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,6-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,1,3-TRIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,5-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,3-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00

3,5-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3,4-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
m-& p-XYLENE	0.0	0.03	0.3	0.0	0.00	0.0	0.1	0.22	0.6	0.0	0.03	0.22
4-METHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,4-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-ETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
STYRENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
o-XYLENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-3-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-3-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
NONANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ISOPROPYLBENZENE (CUMENE)	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
n-PROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-3-ETHYLBENZENE	0.1	0.10	1.1	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.03	0.22
1-METHYL-4-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3,5-TRIMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-2-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,4-TRIMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TERT-BUTYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-DECENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
DECANE	0.1	0.05	0.0	0.2	0.20	0.1	0.1	0.19	0.0	0.2	0.15	0.07
ISOBUTYLBENZENE	0.1	0.05	0.1	0.2	0.19	0.4	0.1	0.18	0.1	0.1	0.15	0.27
METHYLPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
BUTYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-DIMETHYL-5-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
S-BUTYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-3-ISOPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,3-TRIMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-4-ISOPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
INDAN	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-2-ISOPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-DIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,4-DIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-3-N-PROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-4-N-PROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2-DIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-2-N-PROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,4-DIMETHYL-2-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-DIMETHYL-4-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2-DIMETHYL-4-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-DIMETHYL-2-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNDECANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2-DIMETHYL-3-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,4,5-TETRAMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLBUTYLBENZENE (sec AMYLBENZENE)	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,4-DIMETHYLCUMENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,3,5-TETRAMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TERT-1-BUT-2-METHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,3,4-TETRAMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
N-PENT-BENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TERT-1-BUT-3,5-DIMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TERT-1-BUTYL-4-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
NAPHTHALENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
DODECANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3,5-TRIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,4-TRIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEXYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNIDENTIFIED C9-C12+	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
FORMALDEHYDE	5.3	3.63	37.9	0.1	0.11	0.9	0.8	1.52	4.0	1.3	1.31	9.42
ACETALDEHYDE	0.4	0.27	2.2	0.0	0.00	0.0	0.2	0.53	1.1	0.1	0.13	0.74
ACROLEIN	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ACETONE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
PROPIONALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CROTONALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ISOBUTYRALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
METHYL ETHYL KETONE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
BENZALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEXANALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00

TEST NUMBER: G72051FTP10K  
 TEST CAR: FORD F150 PICKUP #51  
 TEST DATE: 8/29/96  
 TEST FUEL: CNG

COMPOUND	BAG 1	BAG 1	BAG 1	BAG 2	BAG 2	BAG 2	BAG 3	BAG 3	BAG 3	FTP		FTP
	MG/M	WEIGHT %	OZONE, MG/M	MG/M	WEIGHT %	OZONE, MG/M	MG/M	WEIGHT %	OZONE, MG/M	MG/M	WEIGHT %	OZONE, MG/M
METHANE	2047.1		30.3	2579.3		38.2	2025.2		30.0	2317.0		34.29
ETHANE	95.9	63.61	24.0	113.5	85.95	28.4	94.5	76.85	23.8	104.7	78.42	26.16
ETHYLENE	13.8	9.14	100.5	0.3	0.19	1.8	4.7	3.82	34.2	4.3	3.20	31.16
PROPANE	10.6	7.06	5.1	9.9	7.48	4.7	9.4	7.66	4.5	9.9	7.42	4.76
PROPYLENE	1.5	1.01	14.3	0.0	0.00	0.0	0.8	0.49	5.6	0.5	0.36	4.51
ACETYLENE	0.3	0.21	0.2	0.0	0.00	0.0	0.1	0.07	0.0	0.1	0.07	0.05
PROPADIENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
BUTANE	2.2	1.48	2.3	1.3	0.95	1.3	2.4	1.93	2.4	1.8	1.32	1.80
TRANS-2-BUTENE	0.2	0.16	2.4	0.0	0.00	0.0	0.3	0.23	2.8	0.1	0.10	1.27
1-BUTENE	0.3	0.20	2.7	0.0	0.00	0.0	0.1	0.09	1.0	0.1	0.07	0.85
2-METHYLPROPENE (ISOBUTYLENE)	0.3	0.21	1.7	0.0	0.00	0.0	0.3	0.21	1.4	0.1	0.10	0.73
2,2-DIMETHYLPROPANE (NEOPENTANE)	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
PROPYNE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-BUTADIENE	0.2	0.14	2.2	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.03	0.47
2-METHYLPROPANE (ISOBUTANE)	1.7	1.11	2.0	1.4	1.06	1.7	2.4	1.95	2.9	1.7	1.30	2.10
1-BUTYNE	0.5	0.36	5.0	0.3	0.20	2.4	0.0	0.00	0.0	0.2	0.18	2.27
METHANOL	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-BUTENE	0.3	0.20	3.0	0.0	0.00	0.0	0.3	0.22	2.7	0.1	0.10	1.37
3-METHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHANOL	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLBUTANE (ISOPENTANE)	2.8	1.87	3.9	0.0	0.00	0.0	1.8	1.43	2.4	1.1	0.80	1.47
2-BUTYNE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-1-BUTENE	0.2	0.11	0.8	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.03	0.18
PENTANE	0.5	0.32	0.5	0.0	0.00	0.0	0.4	0.30	0.4	0.2	0.15	0.21
UNIDENTIFIED C5 OLEFINS	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-1,3-BUTADIENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,3-DIMETHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-2-BUTENE	0.1	0.07	0.7	0.0	0.03	0.2	0.1	0.05	0.4	0.1	0.04	0.38
CYCLOPENTADIENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLBUTANE	0.0	0.00	0.0	0.0	0.01	0.0	0.2	0.16	0.2	0.1	0.04	0.05
CYCLOPENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-METHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYLBUTANE	0.1	0.05	0.1	0.0	0.00	0.0	0.1	0.07	0.1	0.0	0.03	0.04
MTBE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-METHYL-CIS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLPENTANE	0.1	0.10	0.2	0.0	0.00	0.0	0.2	0.16	0.3	0.1	0.06	0.13
4-METHYL-TRANS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.03	0.1	0.0	0.01	0.01
2-METHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEXANE	0.2	0.13	0.2	0.0	0.00	0.0	0.0	0.04	0.0	0.1	0.04	0.05
UNIDENTIFIED C6 OLEFINS	0.2	0.10	1.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.02	0.21
TRANS-3-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-3-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-TRANS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYLCYCLOPENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETBE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-CIS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLPENTANE	0.1	0.05	0.1	0.0	0.00	0.0	0.0	0.04	0.1	0.0	0.02	0.04
METHYLCYCLOPENTANE	0.1	0.05	0.2	0.0	0.00	0.0	0.0	0.04	0.1	0.0	0.02	0.08
2,4-DIMETHYLPENTANE	0.0	0.03	0.1	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.02
2,3,3-TRIMETHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,3-TRIMETHYLBUTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,4-DIMETHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYLCYCLOPENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
BENZENE	0.1	0.03	0.0	0.0	0.00	0.0	0.1	0.10	0.1	0.0	0.03	0.02
3-METHYL-1-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,3-DIMETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYLPENTANE	0.0	0.00	0.0	0.1	0.10	0.2	0.0	0.00	0.0	0.1	0.05	0.11
1,1-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CYCLOHEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00

3-METHYLHEXANE	0.0	0.02	0.0	0.0	0.00	0.0	0.1	0.07	0.1	0.0	0.02	0.04
CIS-1,3-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-ETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,2-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,3-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,4-TRIMETHYLPENTANE	1.1	0.72	1.0	0.0	0.00	0.0	0.0	0.00	0.0	0.2	0.17	0.21
2-METHYL-1-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-3-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.04	0.0	0.0	0.01	0.01
CIS-3-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNIDENTIFIED C7	0.0	0.02	0.1	0.0	0.00	0.0	0.0	0.03	0.2	0.0	0.01	0.08
2-METHYL-2-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-TRANS-3-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-ETHYL-CIS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4,4-TRIMETHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,4-TRIMETHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYL-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
METHYLCYCLOHEXANE	0.0	0.03	0.1	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.01
CIS-1,2-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,1,3-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4,4-TRIMETHYL-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,3-TRIMETHYLPENTANE	0.1	0.09	0.2	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.02	0.03
2,5-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLHEXANE	0.1	0.04	0.1	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.02
1-TRANS-2-CIS-4-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,3-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-TRANS-2-CIS-3-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3,4-TRIMETHYLPENTANE	0.1	0.07	0.2	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.02	0.04
2,3,3-TRIMETHYLPENTANE	0.2	0.12	0.2	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.03	0.04
TOLUENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,1,2-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,4-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,4,4-TETRAMETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-AND-TRANS-3,4-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-METHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-3-ETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-3-ETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-CIS-2-TRANS-3-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1,3-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,4-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-ETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,5-TRIMETHYLHEXANE	0.1	0.08	0.1	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.02	0.02
TRANS-1-METHYL-3-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1-METHYL-3-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,1-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1-METHYL-2-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-1-ETHYL-CYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4,4-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,4-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,2-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-4-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
OCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNIDENTIFIED C8	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,3-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1,4-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ISOPROPYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3,5-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1-METHYL-2-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-2-ETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLHEPTANE	1.0	0.69	1.4	2.8	2.10	3.7	1.1	0.86	1.4	1.9	1.46	2.60
4,4-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1,2-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
PROPYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
PROPYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-4-ETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,6-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,1,3-TRIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,5-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,3-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00



3,5-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHYLBENZENE	0.0	0.02	0.1	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.02
2,3,4-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
m-& p-XYLENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-METHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,4-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-ETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
STYRENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
o-XYLENE	0.1	0.06	0.8	0.0	0.00	0.0	0.1	0.05	0.4	0.0	0.02	0.21
1-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-3-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-3-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
NONANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ISOPROPYLBENZENE (CUMENE)	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
n-PROPYLBENZENE	0.0	0.02	0.1	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.01
1-METHYL-3-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-4-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3,5-TRIMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-2-ETHYLBENZENE	0.1	0.06	0.8	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.13
1,2,4-TRIMETHYLBENZENE	0.9	0.81	8.1	0.0	0.00	0.0	0.8	0.68	7.1	0.4	0.31	3.64
TERT-BUTYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-DECENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
DECANE	0.1	0.09	0.1	0.8	0.57	0.4	0.4	0.29	0.2	0.5	0.39	0.24
ISOBUTYLBENZENE	0.1	0.09	0.2	0.7	0.54	1.3	0.3	0.27	0.8	0.5	0.37	0.91
METHYLPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
BUTYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-DIMETHYL-5-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
S-BUTYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-3-ISOPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,3-TRIMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-4-ISOPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
INDAN	0.1	0.09	0.2	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.02	0.03
1-METHYL-2-ISOPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-DIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,4-DIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-3-N-PROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-4-N-PROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2-DIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-2-N-PROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,4-DIMETHYL-2-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-DIMETHYL-4-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2-DIMETHYL-4-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-DIMETHYL-2-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNDECANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2-DIMETHYL-3-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,4,5-TETRAMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLBUTYLBENZENE (sec AMYLBENZENE)	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,4-DIMETHYLCUMENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,3,5-TETRAMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TERT-1-BUT-2-METHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,3,4-TETRAMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
N-PENT-BENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TERT-1-BUT-3,5-DIMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TERT-1-BUTYL-4-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
NAPHTHALENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
DODECANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3,5-TRIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,4-TRIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEXYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNIDENTIFIED C9-C12+	0.2	0.15	0.9	0.3	0.25	1.2	0.0	0.00	0.0	0.2	0.16	0.82
FORMALDEHYDE	12.7	8.42	90.7	0.3	0.20	1.9	1.8	1.48	13.0	3.3	2.45	23.36
ACETALDEHYDE	1.0	0.65	5.4	0.5	0.37	2.7	0.3	0.23	1.5	0.5	0.40	2.96
ACROLEIN	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ACETONE	0.1	0.09	0.1	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.02	0.02
PROPIONALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CROTONALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ISOBUTYRALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.05	0.3	0.0	0.01	0.08
METHYL ETHYL KETONE	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.05	0.1	0.0	0.01	0.02
BENZALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEXANALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00

TEST NUMBER: G72051FTP20K  
 TEST CAR: 1995 F150 PICKUP #51  
 TEST DATE: 7/30/97  
 TEST FUEL: CNG

COMPOUND	BAG 1	BAG 1	BAG 1	BAG 2	BAG 2	BAG 2	BAG 3	BAG 3	BAG 3	FTP	
	WEIGHT MG/MI	OZONE, NMOG %	WEIGHT MG/MI	WEIGHT MG/MI	OZONE, NMOG %	OZONE MG/MI	WEIGHT MG/MI	WEIGHT MG/MI	OZONE MG/MI	MG/MI	WEIGHT NMOG %
METHANE	1936.6		28.7	2407.4		35.6	2108.0		31.2	2228.2	32.98
ETHANE	82.1	66.14	20.5	118.0	86.51	29.5	105.2	71.33	28.3	107.1	26.78
ETHYLENE	11.7	9.39	85.0	0.4	0.33	3.2	10.9	7.42	79.8	5.6	4.12
PROPANE	9.9	7.94	4.7	11.7	8.55	5.6	11.9	8.05	5.7	11.3	8.29
PROPYLENE	0.9	0.71	8.3	0.0	0.02	0.2	0.9	0.63	8.8	0.4	0.33
ACETYLENE	0.3	0.25	0.2	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.05
PROPADIENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
BUTANE	2.3	1.86	2.4	2.2	1.60	2.2	3.0	2.06	3.1	2.4	1.79
TRANS-2-BUTENE	0.1	0.10	1.2	0.0	0.00	0.0	0.4	0.30	4.5	0.1	0.11
1-BUTENE	0.2	0.13	1.5	0.0	0.00	0.0	0.2	0.16	2.1	0.1	0.07
2-METHYLPROPENE (ISOBUTYLENE)	0.3	0.27	1.8	0.3	0.23	1.7	0.6	0.40	3.1	0.4	0.29
2,2-DIMETHYLPROPANE (NEOPENTANE)	0.1	0.04	0.0	0.0	0.00	0.0	0.1	0.04	0.0	0.0	0.02
PROPYNE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
1,3-BUTADIENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
2-METHYLPROPANE (ISOBUTANE)	1.5	1.23	1.8	1.5	1.08	1.8	2.3	1.56	2.8	1.7	1.25
1-BUTYNE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
METHANOL	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
CIS-2-BUTENE	0.1	0.12	1.4	0.0	0.00	0.0	0.5	0.35	5.1	0.2	0.12
3-METHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
ETHANOL	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
2-METHYLBUTANE (ISOPENTANE)	2.2	1.80	3.1	1.2	0.87	1.6	3.3	2.24	4.6	2.0	1.45
2-BUTYNE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
1-PENTENE	0.0	0.00	0.0	0.3	0.19	1.8	0.1	0.07	0.6	0.2	0.12
2-METHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
PENTANE	0.9	0.74	1.0	0.8	0.41	0.6	1.1	0.74	1.1	0.8	0.57
UNIDENTIFIED C5 OLEFINS	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
2-METHYL-1,3-BUTADIENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
TRANS-2-PENTENE	0.1	0.08	0.8	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01
3,3-DIMETHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
CIS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
2-METHYL-2-BUTENE	0.1	0.06	0.5	0.0	0.00	0.0	0.1	0.09	0.9	0.1	0.04
TERT-BUTANOL	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
CYCLOPENTADIENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
2,2-DIMETHYLBUTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.07	0.1	0.0	0.02
CYCLOPENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
4-METHYL-1-PENTENE	0.1	0.09	0.5	0.0	0.00	0.0	0.1	0.08	0.5	0.1	0.04
3-METHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
CYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
2,3-DIMETHYLBUTANE	0.1	0.11	0.2	0.0	0.00	0.0	0.1	0.08	0.1	0.1	0.04
MTBE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
4-METHYL-CIS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
2-METHYLPENTANE	0.3	0.24	0.5	0.0	0.03	0.1	0.3	0.18	0.4	0.2	0.11
4-METHYL-TRANS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
3-METHYLPENTANE	0.1	0.06	0.1	0.0	0.00	0.0	0.1	0.07	0.1	0.0	0.03
2-METHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
1-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
HEXANE	0.2	0.16	0.2	0.0	0.00	0.0	0.2	0.12	0.2	0.1	0.07
UNIDENTIFIED C6 OLEFINS	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
TRANS-3-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
CIS-3-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
DIISOPROPYL ETHER	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
TRANS-2-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
3-METHYL-TRANS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
2-METHYL-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
3-METHYLCYCLOPENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
CIS-2-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
ETBE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
3-METHYL-CIS-2-PENTENE	0.1	0.09	0.7	0.0	0.00	0.0	0.1	0.08	0.8	0.1	0.04
2,2-DIMETHYLPENTANE, NOTE A	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
METHYLCYCLOPENTANE, NOTE A	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
2,4-DIMETHYLPENTANE	0.0	0.02	0.0	0.0	0.00	0.0	0.0	0.01	0.0	0.0	0.01
2,2,3-TRIMETHYLBUTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
3,4-DIMETHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
1-METHYLCYCLOPENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
BENZENE	0.2	0.13	0.1	0.0	0.00	0.0	0.4	0.26	0.2	0.1	0.10
3-METHYL-1-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
3,3-DIMETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.06	0.1	0.0	0.02
CYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
2-METHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
2,3-DIMETHYLPENTANE	0.0	0.01	0.0	0.0	0.00	0.0	0.0	0.02	0.0	0.0	0.01
1,1-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
TERT-AMYL METHYL ETHER	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
CYCLOHEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00



3-METHYLHEXANE	0.1	0.11	0.2	0.0	0.00	0.0	0.0	0.02	0.0	0.0	0.02	0.05
CIS-1,3-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-ETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,2-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,3-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,4-TRIMETHYLPENTANE	1.1	0.90	1.0	0.0	0.00	0.0	0.8	0.57	0.8	0.5	0.34	0.43
2-METHYL-1-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-3-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-3-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNIDENTIFIED C7	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-2-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-TRANS-3-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-ETHYL-CIS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4,4-TRIMETHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYL-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
METHYLCYCLOHEXANE	0.1	0.05	0.1	0.0	0.00	0.0	0.0	0.02	0.0	0.0	0.01	0.04
CIS-1,2-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,1,3-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4,4-TRIMETHYL-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,3-TRIMETHYLPENTANE	0.1	0.10	0.1	0.0	0.00	0.0	0.1	0.08	0.1	0.1	0.04	0.07
2,5-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLHEXANE	0.2	0.14	0.3	0.0	0.00	0.0	0.2	0.11	0.3	0.1	0.06	0.12
1-TRANS-2-CIS-4-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,3-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-TRANS-2-CIS-3-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3,4-TRIMETHYLPENTANE	0.1	0.12	0.2	0.0	0.00	0.0	0.1	0.10	0.2	0.1	0.05	0.11
2,3,3-TRIMETHYLPENTANE	0.1	0.12	0.2	0.0	0.00	0.0	0.1	0.09	0.2	0.1	0.05	0.08
TOLUENE	0.5	0.41	1.4	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.08	0.28
2,3-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,1,2-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,4-DIMETHYLHEXANE, NOTE B	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-METHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-CIS-2-TRANS-3-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1,3-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,4-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-ETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,5-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1-METHYL-3-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1-METHYL-3-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,1-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1-METHYL-2-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-1-ETHYL-CYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4,4-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,4-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,2-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-4-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
OCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNIDENTIFIED C8	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,3-DIMETHYLCYCLOHEXANE, NOTE C	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ISOPROPYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3,5-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1-METHYL-2-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4,4-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1,2-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,6-DIMETHYLHEPTANE, NOTE D	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,1,3-TRIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,5-DIMETHYLHEPTANE, NOTE E	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,3-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,5-DIMETHYLHEPTANE, NOTE E	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3,4-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
m-&p-XYLENE	0.0	0.00	0.0	0.0	0.00	0.0	0.2	0.12	1.3	0.0	0.03	0.35
4-METHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,4-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-ETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00

STYRENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
o-XYLENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-3-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-3-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
NONANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ISOPROPYLBENZENE (CUMENE)	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
n-PROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-3-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-4-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3,5-TRIMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-2-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,4-TRIMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TERT-BUTYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-DECENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
DECANE, NOTE F	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.04	0.0	0.0	0.01	0.01
ISOBUTYLBENZENE, NOTE F	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.03	0.1	0.0	0.01	0.03
1,3-DIMETHYL-5-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
METHYLPROPYLBENZENE (sec butylbenzene)	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-3-ISOPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,3-TRIMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-4-ISOPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
INDAN	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-2-ISOPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-DIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,4-DIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-3-N-PROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-4-N-PROPYLBENZENE, NOTE G	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2-DIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-2-N-PROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,4-DIMETHYL-2-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-DIMETHYL-4-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2-DIMETHYL-4-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-DIMETHYL-2-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNDECANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2-DIMETHYL-3-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,4,5-TETRAMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLBUTYLBENZENE (sec AMYLBENZENE)	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,4-DIMETHYLCUMENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,3,5-TETRAMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TERT-1-BUT-2-METHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,3,4-TETRAMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
N-PENT-BENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TERT-1-BUT-3,5-DIMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TERT-1-BUTYL-4-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
NAPHTHALENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
DODECANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3,5-TRIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,4-TRIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEXYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNIDENTIFIED C9-C12+	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
FORMALDEHYDE	7.0	5.55	50.1	0.3	0.19	1.8	2.4	1.62	17.1	2.2	1.63	16.00
ACETALDEHYDE	0.3	0.25	1.7	0.0	0.00	0.0	0.4	0.30	2.5	0.2	0.14	1.02
ACROLEIN	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ACETONE	0.1	0.04	0.0	0.0	0.00	0.0	0.1	0.09	0.1	0.0	0.04	0.03
PROPIONALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.02	0.2	0.0	0.01	0.05
CROTONALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ISOBUTYRALDEHYDE, NOTE H	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
METHYL ETHYL KETONE, NOTE H	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
BENZALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ISOVALERALDEHYDE	0.2	0.18	1.0	0.0	0.00	0.0	0.2	0.13	0.9	0.1	0.07	0.44
VALERALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.06	0.4	0.0	0.02	0.10
O-TOLUALDEHYDE	0.2	0.16	-0.1	0.0	0.00	0.0	0.3	0.17	-0.1	0.1	0.08	-0.06
M/P-TOLUALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEXANALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
DIMETHYLBENZALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00

A - 2,2-Dimethylpentane and methylcyclopentane co-elute. GC peak area split equally between the two compounds.

B - 3-Methyl-3-ethylpentane co-elutes with reported compound. Not reported separately.

C - Cis-1,4-Dimethylcyclohexane co-elutes with reported compound. Not reported separately.

D - Propylcyclopentane co-elutes with reported compound. Not reported separately.

E - 2,5-Dimethylheptane and 3,5-dimethylheptane co-elute. GC peak area split equally between the two compounds.

F - Decane and isobutylbenzene co-elute. GC peak area split equally between the two compounds.

G - n-Butylbenzene co-elutes with reported compound. Not reported separately.

H - Isobutyraldehyde and methyl ethyl ketone co-elute. LC peak area split equally between the two compounds.

TEST NUMBER: G72051FTP4K  
 TEST CAR: 1995 FORD F-150 PICKUP #51  
 TEST DATE: 12/13/95  
 TEST FUEL: EEE

COMPOUND	BAG 1	BAG 1	BAG 1	BAG 2	BAG 2	BAG 2	BAG 3	BAG 3	BAG 3	FTP		FTP	
	MG/M	WEIGHT	OZONE,	MG/M	WEIGHT	OZONE	MG/M	WEIGHT	OZONE	MG/M	NMOG %	MG/M	OZONE
METHANE	132.3		2.0	118.2		1.7	100.7		1.5	116.3			1.72
ETHANE	24.6	2.33	6.2	17.9	31.20	4.5	0.0	0.00	0.0	14.4	4.31		3.60
ETHYLENE	60.0	5.67	437.6	0.8	1.32	5.5	16.8	5.44	122.8	17.4	5.22		127.18
PROPANE	1.7	0.16	0.8	0.7	1.29	0.4	1.2	0.38	0.6	1.1	0.32		0.51
PROPYLENE	37.6	3.55	353.7	0.3	0.54	2.9	8.7	2.82	82.2	10.4	3.10		97.30
ACETYLENE	14.6	1.38	7.3	0.0	0.00	0.0	0.0	0.00	0.0	3.0	0.91		1.52
PROPADIENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00		0.00
BUTANE	7.6	0.71	7.7	2.6	4.61	2.7	4.3	1.37	4.3	4.1	1.23		4.19
TRANS-2-BUTENE	5.1	0.48	50.9	0.0	0.00	0.0	2.6	0.84	25.8	1.8	0.53		17.62
1-BUTENE	5.9	0.56	52.4	0.0	0.00	0.0	1.0	0.34	9.2	1.5	0.45		13.39
2-METHYLPROPENE (ISOBUTYLENE)	25.2	2.38	133.6	0.2	0.32	1.0	6.0	1.92	31.6	6.9	2.08		36.83
2,2-DIMETHYLPROPANE (NEOPENTANE)	1.2	0.11	0.4	0.0	0.00	0.0	0.4	0.14	0.2	0.4	0.11		0.13
PROPYNE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00		0.00
1,3-BUTADIENE	1.4	0.13	15.1	0.0	0.00	0.0	0.0	0.00	0.0	0.3	0.09		3.12
2-METHYLPROPANE (ISOBUTANE)	15.1	1.42	18.3	2.9	5.11	3.5	8.4	2.73	10.2	7.0	2.09		8.43
1-BUTYNE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00		0.00
METHANOL	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00		0.00
CIS-2-BUTENE	7.6	0.71	75.1	0.0	0.00	0.0	2.2	0.70	21.6	2.2	0.65		21.49
3-METHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00		0.00
ETHANOL	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00		0.00
2-METHYLBUTANE (ISOPENTANE)	111.1	10.49	153.4	9.4	16.43	13.0	48.4	15.83	66.7	41.2	12.33		56.82
2-BUTYNE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00		0.00
1-PENTENE	0.9	0.06	5.3	0.0	0.00	0.0	0.0	0.00	0.0	0.2	0.05		1.10
2-METHYL-1-BUTENE	1.7	0.16	8.1	0.0	0.00	0.0	0.3	0.09	1.4	0.4	0.13		2.05
PENTANE	10.8	1.02	11.3	1.2	2.01	1.2	4.9	1.57	5.1	4.2	1.25		4.34
UNIDENTIFIED C5 OLEFINS	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00		0.00
2-METHYL-1,3-BUTADIENE	0.3	0.03	2.8	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02		0.58
TRANS-2-PENTENE	0.7	0.07	6.2	0.0	0.00	0.0	0.3	0.09	2.4	0.2	0.07		1.94
3,3-DIMETHYL-1-BUTENE	0.5	0.05	2.4	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.03		0.50
CIS-2-PENTENE	0.5	0.05	4.5	0.0	0.00	0.0	0.1	0.03	0.9	0.1	0.04		1.17
2-METHYL-2-BUTENE	3.4	0.33	22.1	0.0	0.00	0.0	1.2	0.38	7.5	1.0	0.31		6.84
CYCLOPENTADIENE	0.3	0.03	2.3	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02		0.48
2,2-DIMETHYLBUTANE	1.8	0.17	1.5	0.2	0.39	0.2	0.8	0.26	0.7	0.7	0.21		0.58
CYCLOPENTENE	1.1	0.11	8.7	0.0	0.00	0.0	0.3	0.11	2.6	0.3	0.10		2.51
4-METHYL-1-PENTENE	0.3	0.03	1.5	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02		0.32
3-METHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00		0.00
CYCLOPENTANE	1.3	0.12	3.0	0.2	0.28	0.4	0.5	0.15	1.1	0.5	0.14		1.12
2,3-DIMETHYLBUTANE	6.8	0.64	7.3	0.1	0.26	0.2	2.5	0.80	2.6	2.2	0.65		2.31
MTBE	0.2	0.02	0.2	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02		0.03
2,3-DIMETHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00		0.00
4-METHYL-CIS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00		0.00
2-METHYLPENTANE	12.3	1.16	18.8	0.8	1.48	1.3	4.7	1.51	7.1	4.3	1.28		6.53
4-METHYL-TRANS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00		0.00
3-METHYLPENTANE	8.5	0.80	12.9	0.0	0.00	0.0	2.9	0.92	4.3	2.5	0.78		3.87
2-METHYL-1-PENTENE	0.2	0.01	0.7	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01		0.14
1-HEXENE	0.3	0.03	1.4	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02		0.29
HEXANE	8.8	0.83	8.6	0.2	0.36	0.2	3.1	0.99	3.0	2.8	0.83		2.72
UNIDENTIFIED C6 OLEFINS	0.2	0.02	1.6	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01		0.33
TRANS-3-HEXENE	0.2	0.02	1.2	0.0	0.00	0.0	0.1	0.03	0.6	0.1	0.02		0.41
CIS-3-HEXENE	0.3	0.03	2.0	0.0	0.00	0.0	0.1	0.04	0.8	0.1	0.03		0.63
TRANS-2-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00		0.00
3-METHYL-TRANS-2-PENTENE	0.4	0.04	2.9	0.0	0.00	0.0	0.2	0.06	1.1	0.1	0.04		0.89
2-METHYL-2-PENTENE	0.5	0.05	3.3	0.0	0.00	0.0	0.1	0.03	0.6	0.1	0.04		0.87
3-METHYLCYCLOPENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00		0.00
CIS-2-HEXENE	0.3	0.03	2.0	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02		0.42
ETBE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00		0.00
3-METHYL-CIS-2-PENTENE	0.5	0.04	3.0	0.0	0.00	0.0	0.1	0.05	1.0	0.1	0.04		0.89
2,2-DIMETHYLPENTANE	2.5	0.24	3.5	0.0	0.00	0.0	0.7	0.22	1.0	0.7	0.21		0.99
METHYLCYCLOPENTANE	2.5	0.23	7.0	0.0	0.00	0.0	0.7	0.21	1.9	0.7	0.21		1.96
2,4-DIMETHYLPENTANE	7.1	0.67	12.6	0.4	0.72	0.7	2.6	0.82	4.5	2.4	0.71		4.24
2,3,3-TRIMETHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00		0.00
2,2,3-TRIMETHYLBUTANE	0.3	0.03	0.4	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02		0.07
3,4-DIMETHYL-1-PENTENE	0.1	0.01	0.5	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01		0.10
1-METHYLCYCLOPENTENE	1.1	0.10	6.2	0.0	0.00	0.0	0.4	0.12	2.2	0.3	0.10		1.88
BENZENE	44.0	4.16	18.5	3.9	6.81	1.6	14.9	4.83	6.3	15.2	4.56		6.40
3-METHYL-1-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00		0.00
3,3-DIMETHYLPENTANE	0.8	0.08	0.6	0.0	0.00	0.0	0.2	0.08	0.2	0.2	0.07		0.16
CYCLOHEXANE	3.2	0.30	4.1	0.0	0.00	0.0	1.0	0.33	1.3	0.9	0.28		1.21
2-METHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00		0.00
2,3-DIMETHYLPENTANE	9.3	0.88	14.0	0.0	0.00	0.0	3.0	0.96	4.5	2.7	0.82		4.13
1,1-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00		0.00
CYCLOHEXENE	0.1	0.01	0.8	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01		0.16

3-METHYLHEXANE	4.6	0.43	6.4	0.0	0.00	0.0	1.5	0.47	2.0	1.4	0.40	1.89
CIS-1,3-DIMETHYLCYCLOPENTANE	0.3	0.03	0.9	0.0	0.00	0.0	0.1	0.05	0.4	0.1	0.03	0.28
3-ETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,2-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,3-DIMETHYLCYCLOPENTANE	0.3	0.03	0.8	0.0	0.00	0.0	0.1	0.03	0.3	0.1	0.03	0.24
1-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,4-TRIMETHYLPENTANE	100.9	9.52	93.8	4.8	8.41	4.5	38.1	12.32	35.5	33.8	10.14	31.48
2-METHYL-1-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-3-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEPTANE	2.0	0.19	1.6	0.0	0.00	0.0	0.8	0.20	0.5	0.6	0.17	0.46
CIS-3-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNIDENTIFIED C7	0.2	0.02	1.0	0.0	0.00	0.0	0.1	0.03	0.4	0.1	0.02	0.33
2-METHYL-2-HEXENE	0.1	0.01	0.7	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.14
3-METHYL-TRANS-3-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-ETHYL-CIS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4,4-TRIMETHYL-1-PENTENE	0.2	0.02	0.6	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.12
2,2,4-TRIMETHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYL-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-HEPTENE	0.2	0.02	1.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.22
METHYLCYCLOHEXANE	2.6	0.24	4.7	0.0	0.00	0.0	0.8	0.27	1.6	0.8	0.23	1.41
CIS-1,2-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,1,3-TRIMETHYLCYCLOPENTANE	0.2	0.02	0.4	0.0	0.00	0.0	0.1	0.03	0.2	0.1	0.02	0.14
2,4,4-TRIMETHYL-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,3-TRIMETHYLPENTANE	14.2	1.34	17.1	0.6	1.04	0.7	5.1	1.65	6.1	4.7	1.40	5.59
2,5-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLHEXANE	13.4	1.26	20.0	0.5	0.91	0.8	4.2	1.37	5.3	4.2	1.26	6.30
1-TRANS-2-CIS-4-TRIMETHYLCYCLOPENTANE	0.2	0.02	0.4	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.07
3,3-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-TRANS-2-CIS-3-TRIMETHYLCYCLOPENTANE	0.1	0.01	0.2	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.04
2,3,4-TRIMETHYLPENTANE	17.8	1.68	28.4	0.7	1.26	1.2	6.3	2.03	10.0	5.8	1.73	9.24
2,3,3-TRIMETHYLPENTANE	28.5	2.69	34.2	1.1	1.84	1.3	10.9	3.52	13.1	9.4	2.83	11.33
TOLUENE	220.7	20.84	602.4	2.9	5.08	8.0	55.8	17.97	151.8	62.5	18.70	170.52
2,3-DIMETHYLHEXANE	13.3	1.25	17.5	0.0	0.00	0.0	3.5	1.13	4.6	3.7	1.11	4.89
1,1,2-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLHEPTANE	1.2	0.12	1.2	0.0	0.00	0.0	0.4	0.12	0.4	0.4	0.11	0.34
3,4-DIMETHYLHEXANE	1.7	0.16	2.1	0.0	0.00	0.0	0.6	0.20	0.7	0.5	0.16	0.63
2,2,4,4-TETRAMETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-AND-TRANS-3,4-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-METHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-3-ETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-3-ETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYLHEPTANE	0.7	0.07	0.7	0.0	0.00	0.0	0.2	0.07	0.2	0.2	0.07	0.22
1-CIS,2-TRANS,3-TRIMETHYLCYCLOPENTANE	0.1	0.01	0.2	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.05
CIS-1,3-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,4-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-ETHYLHEXANE	0.3	0.03	0.3	0.0	0.00	0.0	0.1	0.03	0.1	0.1	0.03	0.10
2,2,5-TRIMETHYLHEXANE	9.1	0.86	8.8	0.4	0.65	0.4	3.0	0.88	2.9	2.9	0.87	2.83
TRANS-1-METHYL-3-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1-METHYL-3-ETHYLCYCLOPENTANE	0.2	0.02	0.4	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.07
1,1-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1-METHYL-2-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-1-ETHYL-CYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4,4-TRIMETHYLHEXANE	0.5	0.05	0.5	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.03	0.11
2,2,4-TRIMETHYLHEXANE	0.5	0.05	0.6	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,2-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-4-OCTENE	0.3	0.03	1.5	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02	0.31
OCTANE	0.6	0.05	0.3	0.0	0.00	0.0	0.1	0.04	0.1	0.2	0.05	0.09
UNIDENTIFIED C8	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-OCTENE	0.1	0.01	0.6	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.13
TRANS-1,3-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1,4-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-OCTENE	0.1	0.01	0.6	0.0	0.00	0.0	0.1	0.03	0.6	0.1	0.02	0.28
ISOPROPYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3,5-TRIMETHYLHEXANE	1.2	0.11	1.4	0.0	0.00	0.0	0.4	0.12	0.4	0.4	0.11	0.40
CIS-1-METHYL-2-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-2-ETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLHEPTANE	0.2	0.02	0.3	1.0	1.74	1.3	1.6	0.53	2.2	1.0	0.30	1.36
4,4-DIMETHYLHEPTANE	0.5	0.05	0.6	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.03	0.12
CIS-1,2-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
PROPYLCYCLOPENTANE	0.2	0.01	0.4	0.0	0.00	0.0	0.1	0.02	0.1	0.0	0.01	0.11
ETHYLCYCLOHEXANE	0.1	0.01	0.2	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.05
PROPYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-4-ETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,6-DIMETHYLHEPTANE	0.2	0.01	0.2	0.0	0.00	0.0	0.1	0.02	0.1	0.0	0.01	0.06
1,1,3-TRIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,5-DIMETHYLHEPTANE	0.3	0.02	0.3	0.0	0.00	0.0	0.1	0.02	0.1	0.1	0.02	0.08
3,3-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00

3,5-DIMETHYLHEPTANE	0.3	0.02	0.3	0.0	0.00	0.0	0.1	0.02	0.1	0.1	0.02	0.08
ETHYLBENZENE	7.4	0.70	19.9	0.0	0.00	0.0	2.0	0.83	5.3	2.1	0.62	5.57
2,3,4-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
m-& p-XYLENE	10.3	0.97	76.0	0.4	0.85	2.8	3.2	1.04	23.8	3.2	0.96	23.69
4-METHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,4-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-ETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLOCTANE	0.2	0.02	0.2	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.04
3-METHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
STYRENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
o-XYLENE	5.8	0.54	37.2	0.0	0.00	0.0	1.7	0.55	11.1	1.7	0.50	10.75
1-NONENE	0.4	0.04	0.9	0.0	0.00	0.0	0.1	0.05	0.3	0.1	0.04	0.28
TRANS-3-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-3-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
NONANE	0.3	0.03	0.2	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02	0.03
TRANS-2-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ISOPROPYLBENZENE (CUMENE)	1.2	0.11	2.7	0.0	0.00	0.0	0.2	0.07	0.5	0.3	0.09	0.89
2,2-DIMETHYLOCTANE	0.2	0.02	0.2	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02	0.05
2,4-DIMETHYLOCTANE	0.9	0.09	0.9	0.0	0.00	0.0	0.0	0.00	0.0	0.2	0.08	0.19
n-PROPYLBENZENE	5.4	0.51	11.4	0.0	0.00	0.0	0.8	0.26	1.7	1.3	0.40	2.82
1-METHYL-3-ETHYLBENZENE	23.9	2.25	171.7	0.4	0.71	2.9	4.1	1.33	29.7	6.3	1.88	45.23
1-METHYL-4-ETHYLBENZENE	10.0	0.94	71.7	0.1	0.23	1.0	1.8	0.57	12.7	2.8	0.78	18.81
1,3,5-TRIMETHYLBENZENE	12.2	1.15	123.8	0.2	0.42	2.4	2.2	0.70	21.8	3.2	0.97	32.86
1-METHYL-2-ETHYLBENZENE	8.5	0.80	60.9	0.0	0.00	0.0	1.4	0.45	10.0	2.1	0.64	15.36
1,2,4-TRIMETHYLBENZENE	38.1	3.41	319.1	0.7	1.19	6.0	4.8	1.50	41.1	9.1	2.73	80.45
TERT-BUTYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-DECENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
DECANE	0.5	0.05	0.2	0.2	0.41	0.1	0.5	0.15	0.2	0.3	0.10	0.16
ISOBUTYLBENZENE	0.5	0.04	0.9	0.2	0.38	0.4	0.4	0.14	0.8	0.3	0.10	0.61
METHYLPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
BUTYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-DIMETHYL-5-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
S-BUTYLBENZENE	0.5	0.05	1.0	0.0	0.00	0.0	0.2	0.05	0.3	0.1	0.04	0.28
1-METHYL-3-ISOPROPYLBENZENE	4.9	0.48	28.5	0.1	0.24	0.8	0.7	0.23	4.1	1.3	0.38	7.43
1,2,3-TRIMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-4-ISOPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
INDAN	1.5	0.15	1.6	0.0	0.00	0.0	0.5	0.15	0.5	0.4	0.13	0.48
1-METHYL-2-ISOPROPYLBENZENE	0.8	0.06	3.8	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.04	0.79
1,3-DIETHYLBENZENE	0.4	0.04	2.7	0.0	0.00	0.0	0.1	0.04	0.9	0.1	0.04	0.79
1,4-DIETHYLBENZENE	1.8	0.17	11.8	0.0	0.00	0.0	0.2	0.07	1.3	0.4	0.13	2.79
1-METHYL-3-N-PROPYLBENZENE	1.4	0.13	8.8	0.0	0.00	0.0	0.0	0.00	0.0	0.3	0.08	1.82
1-METHYL-4-N-PROPYLBENZENE	0.5	0.05	3.5	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.03	0.72
1,2-DIETHYLBENZENE	2.2	0.21	14.3	0.0	0.00	0.0	0.3	0.10	2.0	0.5	0.16	3.50
1-METHYL-2-N-PROPYLBENZENE	1.1	0.11	7.2	0.0	0.00	0.0	0.3	0.08	1.6	0.3	0.09	1.94
1,4-DIMETHYL-2-ETHYLBENZENE	1.6	0.15	14.7	0.0	0.00	0.0	0.2	0.07	2.0	0.4	0.12	3.59
1,3-DIMETHYL-4-ETHYLBENZENE	1.0	0.10	9.5	0.0	0.00	0.0	0.2	0.06	1.6	0.3	0.08	2.41
1,2-DIMETHYL-4-ETHYLBENZENE	0.8	0.07	7.1	0.0	0.00	0.0	0.1	0.03	0.9	0.2	0.08	1.74
1,3-DIMETHYL-2-ETHYLBENZENE	0.1	0.01	1.2	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.25
UNDECANE	0.3	0.03	0.1	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02	0.02
1,2-DIMETHYL-3-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,4,5-TETRAMETHYLBENZENE	0.5	0.05	4.8	0.0	0.00	0.0	0.5	0.15	4.2	0.2	0.07	2.11
2-METHYLBUTYLBENZENE (sec AMYLBENZENE)	0.0	0.00	0.0	0.0	0.00	0.0	0.5	0.15	0.8	0.1	0.04	0.22
3,4-DIMETHYLCUMENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,3,5-TETRAMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TERT-1-BUT-2-METHYLBENZENE	0.1	0.01	0.5	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.10
1,2,3,4-TETRAMETHYLBENZENE	0.1	0.01	1.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.21
N-PENT-BENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TERT-1-BUT-3,5-DIMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TERT-1-BUTYL-4-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
NAPHTHALENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
DODECANE	0.2	0.02	0.1	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.01
1,3,5-TRIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,4-TRIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEXYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNIDENTIFIED C9-C12+	10.3	0.97	39.3	0.2	0.32	0.7	1.4	0.48	5.4	2.6	0.78	9.98
FORMALDEHYDE	7.5	0.71	53.9	0.4	0.77	3.2	0.9	0.31	8.8	2.0	0.61	14.65
ACETALDEHYDE	2.3	0.22	12.6	0.1	0.14	0.4	0.5	0.15	2.6	0.6	0.19	3.56
ACROLEIN	0.4	0.03	2.5	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02	0.51
ACETONE	1.6	0.16	0.9	0.0	0.00	0.0	0.4	0.14	0.3	0.5	0.14	0.26
PROPIONALDEHYDE	0.5	0.05	3.5	0.3	0.45	1.7	0.2	0.06	1.3	0.3	0.09	1.94
CROTONALDEHYDE	0.2	0.02	1.1	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.22
ISOBUTYRALDEHYDE	0.1	0.01	0.6	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.12
METHYL ETHYL KETONE	0.1	0.01	0.1	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.03
BENZALDEHYDE	1.4	0.13	-0.8	0.0	0.00	0.0	0.0	0.00	0.0	0.3	0.09	-0.16
HEXANALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00



TEST NUMBER: G72051FTP10K  
 TEST CAR: FORD F150 PICKUP #51  
 TEST DATE: 8/27/96  
 TEST FUEL: EEE

COMPOUND	BAG 1	BAG 1	BAG 1	BAG 2	BAG 2	BAG 2	BAG 3	BAG 3	BAG 3	FTP		FTP
	MG/MI	WEIGHT NMOG %	OZONE, MG/MI	MG/MI	WEIGHT NMOG %	OZONE MG/MI	MG/MI	WEIGHT NMOG %	OZONE MG/MI	MG/MI	WEIGHT NMOG %	OZONE MG/MI
METHANE	138.4		2.0	129.9		1.9	99.6		1.5	123.3		1.83
ETHANE	22.3	1.85	5.6	24.9	16.89	6.2	23.8	4.44	6.0	24.0	5.08	6.01
ETHYLENE	66.7	5.54	485.9	2.3	1.56	16.8	32.5	6.07	237.0	24.0	5.07	174.74
PROPANE	1.2	0.10	0.6	1.2	0.83	0.6	3.3	0.62	1.6	1.8	0.38	0.86
PROPYLENE	40.4	3.36	380.0	0.7	0.45	6.3	17.5	3.27	164.8	13.6	2.87	127.46
ACETYLENE	14.5	1.21	7.3	0.0	0.00	0.0	0.0	0.00	0.0	3.0	0.64	1.51
PROPADIENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
BUTANE	13.4	1.11	13.7	7.2	4.90	7.4	9.9	1.85	10.1	9.2	1.95	9.43
TRANS-2-BUTENE	4.8	0.40	47.3	0.2	0.14	2.1	4.7	0.88	46.7	2.4	0.51	23.76
1-BUTENE	7.0	0.58	62.2	6.0	0.00	0.0	2.2	0.41	19.5	2.1	0.43	18.28
2-METHYLPROPENE (ISOBUTYLENE)	28.6	2.38	151.9	0.4	0.28	2.2	12.4	2.32	66.0	9.6	2.02	50.78
2,2-DIMETHYLPROPANE (NEOPENTANE)	0.3	0.02	0.1	0.2	0.15	0.1	0.2	0.04	0.1	0.2	0.05	0.08
PROPYLENE	1.2	0.10	5.0	0.0	0.00	0.0	0.0	0.00	0.0	0.3	0.06	1.03
1,3-BUTADIENE	1.7	0.14	18.4	0.0	0.00	0.0	0.0	0.00	0.0	0.4	0.07	3.81
2-METHYLPROPANE (ISOBUTANE)	15.0	1.25	18.2	7.5	5.08	9.1	11.5	2.14	13.9	10.1	2.14	12.27
1-BUTYNE	0.8	0.06	7.1	0.0	0.00	0.0	1.0	0.18	9.1	0.4	0.09	3.97
METHANOL	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-BUTENE	7.3	0.61	72.3	0.1	0.09	1.3	4.6	0.85	45.3	2.8	0.60	28.14
3-METHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHANOL	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLBUTANE (ISOPENTANE)	90.0	7.49	124.2	25.1	17.06	34.7	58.2	11.05	81.7	48.0	10.14	66.19
2-BUTYNE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-PENTENE	0.8	0.07	5.2	0.2	0.13	1.2	0.2	0.03	1.0	0.3	0.07	1.94
2-METHYL-1-BUTENE	1.1	0.09	5.8	0.0	0.00	0.0	0.0	0.00	0.0	0.2	0.05	1.15
PENTANE	19.6	1.63	20.4	6.0	4.07	6.2	12.0	2.24	12.5	10.5	2.21	10.89
UNIDENTIFIED C5 OLEFINS	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-1,3-BUTADIENE	0.6	0.05	5.1	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02	1.07
TRANS-2-PENTENE	0.7	0.06	5.8	0.0	0.00	0.0	0.4	0.08	3.8	0.3	0.05	2.26
3,3-DIMETHYL-1-BUTENE	0.2	0.02	1.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.20
CIS-2-PENTENE	0.6	0.05	4.9	0.0	0.00	0.0	0.2	0.04	1.8	0.2	0.04	1.52
2-METHYL-2-BUTENE	3.8	0.31	24.1	0.2	0.16	1.5	2.1	0.39	13.4	1.5	0.31	9.48
CYCLOPENTADIENE	0.8	0.07	6.1	0.0	0.00	0.0	0.0	0.00	0.0	0.2	0.04	1.27
2,2-DIMETHYLBUTANE	1.4	0.12	1.1	0.6	0.38	0.5	0.9	0.16	0.7	0.8	0.17	0.67
CYCLOPENTENE	1.3	0.11	9.9	0.0	0.00	0.0	0.6	0.11	4.6	0.4	0.09	3.31
4-METHYL-1-PENTENE	0.4	0.03	1.7	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02	0.36
3-METHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CYCLOPENTANE	2.0	0.17	4.8	0.4	0.24	0.8	0.9	0.18	2.3	0.9	0.18	2.06
2,3-DIMETHYLBUTANE	5.4	0.45	5.7	0.8	0.56	0.9	2.8	0.52	3.0	2.3	0.49	2.46
MTBE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-METHYL-CIS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLPENTANE	7.6	0.64	11.7	1.0	0.67	1.5	3.9	0.73	6.0	3.2	0.67	4.84
4-METHYL-TRANS-2-PENTENE	1.6	0.13	10.4	0.0	0.00	0.0	0.0	0.00	0.0	0.3	0.07	2.15
3-METHYLPENTANE	4.1	0.34	6.2	0.4	0.27	0.8	2.1	0.39	3.2	1.6	0.34	2.47
2-METHYL-1-PENTENE	0.2	0.01	0.7	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.14
1-HEXENE	0.4	0.03	1.7	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02	0.35
HEXANE	5.8	0.48	5.7	0.9	0.64	0.9	3.1	0.58	3.1	2.6	0.54	2.50
UNIDENTIFIED C6 OLEFINS	1.4	0.11	9.1	0.0	0.00	0.0	1.2	0.22	8.0	0.6	0.13	4.09
TRANS-3-HEXENE	0.1	0.01	0.8	0.0	0.00	0.0	0.1	0.03	1.0	0.1	0.01	0.43
CIS-3-HEXENE	0.2	0.02	1.6	0.0	0.00	0.0	0.2	0.04	1.4	0.1	0.02	0.72
TRANS-2-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-TRANS-2-PENTENE	0.4	0.04	3.0	0.0	0.00	0.0	0.2	0.04	1.3	0.1	0.03	0.98
2-METHYL-2-PENTENE	0.5	0.04	3.3	0.0	0.00	0.0	0.2	0.03	1.1	0.1	0.03	0.99
3-METHYLCYCLOPENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-HEXENE	0.2	0.02	1.6	0.0	0.00	0.0	0.1	0.02	0.8	0.1	0.02	0.57
ETBE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-CIS-2-PENTENE	0.3	0.03	2.1	0.0	0.00	0.0	0.3	0.06	2.1	0.2	0.03	1.02
2,2-DIMETHYLPENTANE	2.0	0.18	2.7	0.1	0.09	0.2	0.9	0.17	1.3	0.7	0.15	1.02
METHYLCYCLOPENTANE	1.9	0.16	5.4	0.1	0.09	0.4	0.9	0.17	2.5	0.7	0.15	2.01
2,4-DIMETHYLPENTANE	5.0	0.42	8.9	0.5	0.31	0.8	2.8	0.52	4.9	2.0	0.43	3.62
2,3,3-TRIMETHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,3-TRIMETHYLBUTANE	0.3	0.03	0.4	0.2	0.16	0.3	0.2	0.05	0.3	0.3	0.05	0.34
3,4-DIMETHYL-1-PENTENE	0.3	0.02	0.9	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.01	0.18
1-METHYLCYCLOPENTENE	0.1	0.01	0.7	0.0	0.00	0.0	0.1	0.02	0.5	0.0	0.01	0.27
BENZENE	67.3	5.60	28.3	8.6	4.49	2.8	30.4	5.67	12.8	25.7	5.44	10.81
3-METHYL-1-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,3-DIMETHYLPENTANE	0.1	0.01	0.1	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.02
CYCLOHEXANE	4.0	0.34	5.2	0.0	0.00	0.0	1.9	0.35	2.4	1.4	0.29	1.73
2-METHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYLPENTANE	2.5	0.21	3.7	0.3	0.21	0.5	1.4	0.27	2.2	1.1	0.23	1.61
1,1-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CYCLOHEXENE	0.2	0.02	1.2	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.24

3-METHYLHEXANE	1.3	0.11	1.8	0.0	0.03	0.1	0.7	0.13	1.0	0.5	0.10	0.68
CIS-1,3-DIMETHYLCYCLOPENTANE	0.3	0.03	0.8	0.0	0.00	0.0	0.1	0.03	0.4	0.1	0.02	0.26
3-ETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,2-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,3-DIMETHYLCYCLOPENTANE	0.3	0.02	0.7	0.0	0.00	0.0	0.1	0.02	0.3	0.1	0.02	0.22
1-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,4-TRIMETHYLPENTANE	92.6	7.71	86.2	12.6	8.55	11.7	56.9	10.61	52.9	41.4	8.75	38.48
2-METHYL-1-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-3-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEPTANE	1.4	0.12	1.2	0.2	0.13	0.1	0.8	0.15	0.7	0.6	0.13	0.50
CIS-3-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNIDENTIFIED C7	2.7	0.22	12.1	0.0	0.00	0.0	1.1	0.21	5.0	0.9	0.18	3.90
2-METHYL-2-HEXENE	0.1	0.01	0.8	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.16
3-METHYL-TRANS-3-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-ETHYL-CIS-2-PENTENE	0.2	0.01	0.9	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.18
2,4,4-TRIMETHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,4-TRIMETHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYL-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-HEPTENE	0.3	0.03	1.8	0.0	0.00	0.0	0.2	0.04	1.2	0.1	0.03	0.70
METHYLCYCLOHEXANE	2.1	0.18	3.9	0.2	0.15	0.4	1.1	0.21	2.0	0.9	0.18	1.80
CIS-1,2-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,1,3-TRIMETHYLCYCLOPENTANE	0.2	0.02	0.4	0.0	0.00	0.0	0.1	0.02	0.2	0.1	0.01	0.14
2,4,4-TRIMETHYL-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,3-TRIMETHYLPENTANE	12.5	1.04	15.1	1.2	0.83	1.5	6.3	1.17	7.8	5.0	1.05	5.96
2,5-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLHEXANE	15.3	1.27	22.9	0.7	0.48	1.1	8.3	1.55	12.4	5.8	1.23	8.73
1-TRANS-2-CIS-4-TRIMETHYLCYCLOPENTANE	0.3	0.02	0.5	0.0	0.00	0.0	0.1	0.03	0.3	0.1	0.02	0.19
3,3-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-TRANS-2-CIS-3-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3,4-TRIMETHYLPENTANE	18.3	1.52	29.2	1.5	1.04	2.4	10.0	1.87	16.0	7.3	1.55	11.73
2,3,3-TRIMETHYLPENTANE	27.7	2.30	33.2	2.3	1.57	2.8	14.5	2.70	17.4	10.9	2.31	13.10
TOLUENE	292.8	24.36	799.4	5.2	3.51	14.1	99.6	18.59	271.8	90.8	19.20	248.00
2,3-DIMETHYLHEXANE	13.9	1.15	18.3	0.0	0.00	0.0	4.6	0.85	6.0	4.1	0.87	5.46
1,1,2-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLHEPTANE	2.0	0.16	1.9	0.0	0.00	0.0	0.7	0.13	0.7	0.6	0.13	0.58
3,4-DIMETHYLHEXANE	2.1	0.18	2.5	0.0	0.00	0.0	1.1	0.21	1.3	0.7	0.16	0.89
2,2,4,4-TETRAMETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-AND-TRANS-3,4-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-METHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-3-ETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-3-ETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYLHEPTANE	0.6	0.05	0.8	0.0	0.00	0.0	0.3	0.06	0.3	0.2	0.05	0.22
1-CIS,2-TRANS,3-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1,3-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,4-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-ETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,5-TRIMETHYLHEXANE	8.7	0.72	8.4	0.6	0.38	0.5	4.3	0.80	4.2	3.3	0.69	3.18
TRANS-1-METHYL-3-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1-METHYL-3-ETHYLCYCLOPENTANE	0.2	0.02	0.5	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.01	0.10
1,1-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1-METHYL-2-ETHYLCYCLOPENTANE	0.3	0.03	0.7	0.0	0.00	0.0	0.1	0.02	0.2	0.1	0.02	0.19
1-METHYL-1-ETHYL-CYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4,4-TRIMETHYLHEXANE	0.4	0.03	0.4	0.0	0.00	0.0	0.2	0.04	0.3	0.1	0.03	0.15
2,2,4-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,2-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-4-OCTENE	0.1	0.01	0.5	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.10
OCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.2	0.04	0.1	0.1	0.01	0.04
UNIDENTIFIED C8	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,3-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1,4-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ISOPROPYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3,5-TRIMETHYLHEXANE	1.2	0.10	1.3	0.0	0.00	0.0	0.6	0.10	0.6	0.4	0.08	0.45
CIS-1-METHYL-2-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-2-ETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLHEPTANE	7.8	0.65	10.5	18.5	12.57	24.8	6.7	1.26	9.0	13.1	2.76	17.50
4,4-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1,2-DIMETHYLCYCLOHEXANE	0.1	0.01	0.3	0.1	0.05	0.2	0.1	0.01	0.1	0.1	0.02	0.17
PROPYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
PROPYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-4-ETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,6-DIMETHYLHEPTANE	0.1	0.01	0.2	0.1	0.05	0.1	0.1	0.01	0.1	0.1	0.02	0.10
1,1,3-TRIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,5-DIMETHYLHEPTANE	0.3	0.02	0.3	0.0	0.00	0.0	0.1	0.02	0.1	0.1	0.02	0.09
3,3-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00

3,5-DIMETHYLHEPTANE	0.3	0.02	0.3	0.0	0.00	0.0	0.1	0.02	0.1	0.02	0.09
ETHYLBENZENE	9.5	0.79	25.6	0.2	0.17	0.7	3.9	0.74	10.6	3.2	8.58
2,3,4-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.00	0.00
2,3-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.00	0.00
m-&p-XYLENE	11.5	0.96	85.0	0.8	0.43	4.7	5.6	1.05	41.5	4.3	31.50
4-METHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.00	0.00
3,4-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.00	0.00
4-ETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.00	0.00
2-METHYLOCTANE	0.3	0.03	0.4	0.0	0.00	0.0	0.1	0.02	0.1	0.1	0.11
3-METHYLOCTANE	0.1	0.01	0.2	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.03
STYRENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.00	0.00
o-XYLENE	6.3	0.53	40.9	0.2	0.13	1.2	2.9	0.54	18.6	2.2	14.22
1-NONENE	0.6	0.05	1.3	0.0	0.00	0.0	0.3	0.05	0.8	0.2	0.44
TRANS-3-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
CIS-3-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
NONANE	0.4	0.04	0.2	0.0	0.00	0.0	0.2	0.03	0.1	0.1	0.03
TRANS-2-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
ISOPROPYLBENZENE (CUMENE)	1.5	0.12	3.3	0.0	0.00	0.0	0.4	0.07	0.9	0.4	0.09
2,2-DIMETHYLOCTANE	0.3	0.02	0.3	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.06
2,4-DIMETHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
n-PROPYLBENZENE	6.4	0.53	13.5	0.0	0.00	0.0	1.4	0.26	3.0	1.7	3.61
1-METHYL-3-ETHYLBENZENE	29.4	2.45	211.7	0.6	0.37	4.0	7.8	1.42	54.7	8.5	1.79
1-METHYL-4-ETHYLBENZENE	12.4	1.03	89.1	0.3	0.17	1.8	3.2	0.59	22.9	3.6	0.78
1,3,5-TRIMETHYLBENZENE	13.9	1.16	140.9	0.3	0.22	3.2	3.6	0.68	36.9	4.1	0.86
1-METHYL-2-ETHYLBENZENE	10.7	0.89	78.9	0.3	0.18	1.9	2.7	0.51	19.6	3.1	0.66
1,2,4-TRIMETHYLBENZENE	41.8	3.48	369.2	0.6	0.43	5.6	8.4	1.57	74.1	11.3	2.39
TERT-BUTYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
1-DECENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
DECANE	2.7	0.23	1.3	5.9	3.98	2.8	2.7	0.50	1.2	4.3	0.92
ISOBUTYLBENZENE	2.6	0.22	4.8	5.5	3.78	10.3	2.5	0.47	4.7	4.1	0.86
METHYLPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
BUTYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
1,3-DIMETHYL-5-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
S-BUTYLBENZENE	0.7	0.06	1.3	0.0	0.00	0.0	0.3	0.05	0.5	0.2	0.05
1-METHYL-3-ISOPROPYLBENZENE	6.7	0.56	39.4	0.0	0.00	0.0	1.4	0.27	8.4	1.8	0.38
1,2,3-TRIMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
1-METHYL-4-ISOPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
INDAN	4.5	0.37	4.8	0.0	0.00	0.0	1.1	0.21	1.2	1.2	0.26
1-METHYL-2-ISOPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
1,3-DIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
1,4-DIETHYLBENZENE	2.4	0.20	15.6	0.0	0.00	0.0	0.7	0.13	4.5	0.7	0.15
1-METHYL-3-N-PROPYLBENZENE	2.0	0.17	12.9	0.0	0.00	0.0	0.3	0.06	2.2	0.5	0.11
1-METHYL-4-N-PROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
1,2-DIETHYLBENZENE	3.0	0.25	19.1	0.0	0.00	0.0	0.7	0.13	4.4	0.8	0.17
1-METHYL-2-N-PROPYLBENZENE	1.2	0.10	7.7	0.0	0.00	0.0	0.3	0.06	2.2	0.3	0.07
1,4-DIMETHYL-2-ETHYLBENZENE	1.1	0.09	9.7	0.0	0.00	0.0	0.3	0.06	2.9	0.3	0.07
1,3-DIMETHYL-4-ETHYLBENZENE	1.3	0.11	11.5	0.0	0.00	0.0	0.2	0.03	1.8	0.3	0.07
1,2-DIMETHYL-4-ETHYLBENZENE	1.6	0.13	14.7	0.0	0.00	0.0	0.4	0.07	3.5	0.4	0.09
1,3-DIMETHYL-2-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
UNDECANE	1.6	0.13	0.7	0.0	0.00	0.0	0.2	0.05	0.1	0.4	0.09
1,2-DIMETHYL-3-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
1,2,4,5-TETRAMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
2-METHYLBUTYLBENZENE (sec AMYLBENZENE)	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
3,4-DIMETHYLCUMENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
1,2,3,5-TETRAMETHYLBENZENE	0.4	0.03	3.2	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02
TERT-1-BUT-2-METHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
1,2,3,4-TETRAMETHYLBENZENE	0.3	0.02	2.5	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.01
N-PENT-BENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
TERT-1-BUT-3,5-DIMETHYLBENZENE	0.3	0.03	2.3	0.0	0.00	0.0	2.3	0.43	17.4	0.7	0.15
TERT-1-BUTYL-4-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
NAPHTHALENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
DODECANE	0.9	0.07	0.3	0.0	0.00	0.0	0.2	0.03	0.1	0.2	0.05
1,3,5-TRIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
1,2,4-TRIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
HEXYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00
UNIDENTIFIED C9-C12+	21.1	1.76	80.4	0.0	0.00	0.0	1.8	0.33	6.7	4.9	1.03
FORMALDEHYDE	18.4	1.53	131.5	0.9	0.58	6.1	4.2	0.78	29.7	5.4	1.14
ACETALDEHYDE	5.6	0.46	30.8	0.1	0.05	0.4	1.8	0.34	10.2	1.7	0.36
ACROLEIN	1.6	0.13	10.8	0.0	0.00	0.0	0.0	0.00	0.0	0.3	0.07
ACETONE	3.7	0.31	2.1	0.1	0.05	0.0	1.8	0.34	1.0	1.3	0.28
PROPIONALDEHYDE	1.4	0.12	9.3	0.0	0.00	0.0	0.1	0.02	0.5	0.3	0.07
CROTONALDEHYDE	0.4	0.03	2.3	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02
ISOBUTYRALDEHYDE	0.4	0.03	1.9	0.0	0.00	0.0	0.1	0.01	0.3	0.1	0.02
METHYL ETHYL KETONE	0.4	0.03	0.4	0.0	0.00	0.0	0.1	0.01	0.1	0.1	0.02
BENZALDEHYDE	4.2	0.35	-2.3	0.3	0.21	-0.2	0.0	0.00	0.0	1.0	0.22
HEXANALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00



TEST NUMBER: G72051FTP20K  
 TEST CAR: 1995 F150 PICKUP #51  
 TEST DATE: 7/29/97  
 TEST FUEL: EEE

COMPOUND	BAG 1	BAG 1	BAG 1	BAG 2	BAG 2	BAG 2	BAG 3	BAG 3	BAG 3	FTP	FTP	FTP
	MG/MI	WEIGHT NMOG %	OZONE, MG/MI	MG/MI	WEIGHT NMOG %	OZONE MG/MI	MG/MI	WEIGHT NMOG %	OZONE MG/MI	MG/MI	WEIGHT NMOG %	OZONE MG/MI
METHANE	158.7		2.3	132.9		2.0	102.3		1.5	129.8		1.92
ETHANE	24.4	2.03	6.1	24.2	21.25	6.0	19.8	4.25	4.9	23.0	5.28	5.75
ETHYLENE	77.5	6.44	564.8	1.3	1.15	9.6	34.1	7.33	248.2	26.1	5.99	189.98
PROPANE	1.3	0.11	0.8	1.1	0.97	0.5	1.0	0.21	0.5	1.1	0.25	0.53
PROPYLENE	37.3	3.10	350.2	0.3	0.25	2.6	14.2	3.05	133.2	11.7	2.70	110.39
ACETYLENE	17.3	1.44	8.7	0.0	0.02	0.0	0.0	0.00	0.0	3.6	0.83	1.80
PROPADIENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
BUTANE	11.7	0.97	11.9	6.5	5.75	8.7	7.1	1.53	7.3	7.8	1.79	7.93
TRANS-2-BUTENE	4.5	0.37	44.3	0.1	0.08	0.9	3.0	0.64	29.8	1.8	0.41	17.81
1-BUTENE	8.6	0.55	58.4	0.0	0.00	0.0	1.9	0.41	16.8	1.9	0.43	16.70
2-METHYLPROPENE (ISOBUTYLENE)	33.7	2.80	178.9	0.5	0.41	2.5	12.7	2.73	67.4	10.7	2.46	56.81
2,2-DIMETHYLPROPANE (NEOPENTANE)	0.2	0.02	0.1	0.2	0.17	0.1	0.2	0.03	0.1	0.2	0.05	0.07
PROPYLENE	1.2	0.10	5.0	0.0	0.00	0.0	0.0	0.00	0.0	0.3	0.06	1.04
1,3-BUTADIENE	2.0	0.17	22.1	0.0	0.00	0.0	0.0	0.00	0.0	0.4	0.10	4.57
2-METHYLPROPANE (ISOBUTANE)	11.2	0.93	13.5	6.2	5.48	7.5	7.1	1.53	8.6	7.5	1.72	9.07
1-BUTYNE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
METHANOL	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-BUTENE	6.4	0.53	63.8	0.0	0.00	0.0	3.0	0.85	30.0	2.2	0.50	21.44
3-METHYL-1-BUTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHANOL	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLBUTANE (ISOPENTANE)	91.7	7.63	126.5	29.3	25.77	40.5	48.7	10.48	67.2	47.5	10.92	65.62
2-BUTYNE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-PENTENE	1.4	0.12	8.8	0.0	0.00	0.0	0.1	0.03	0.8	0.3	0.08	2.05
2-METHYL-1-BUTENE	2.4	0.20	11.8	0.0	0.00	0.0	0.6	0.14	3.2	0.7	0.16	3.31
PENTANE	17.8	1.48	18.5	5.7	5.03	8.0	9.1	1.96	9.5	9.2	2.10	9.52
UNIDENTIFIED C5 OLEFINS	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYL-1,3-BUTADIENE	0.9	0.08	8.4	0.0	0.00	0.0	0.0	0.00	0.0	0.2	0.04	1.74
TRANS-2-PENTENE	0.9	0.07	7.9	0.0	0.00	0.0	0.5	0.11	4.4	0.3	0.07	2.83
3,3-DIMETHYL-1-BUTENE	0.4	0.03	1.7	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02	0.35
CIS-2-PENTENE	0.7	0.06	6.1	0.0	0.00	0.0	0.4	0.08	3.1	0.2	0.06	2.13
2-METHYL-2-BUTENE	5.2	0.44	33.8	0.4	0.34	2.5	2.7	0.58	17.2	2.0	0.46	12.96
TERT-BUTANOL	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CYCLOPENTADIENE	0.9	0.08	7.1	0.0	0.00	0.0	0.0	0.00	0.0	0.2	0.04	1.47
2,2-DIMETHYLBUTANE	1.9	0.15	1.5	1.0	0.85	0.8	1.1	0.23	0.9	1.2	0.27	0.97
CYCLOPENTENE	1.4	0.11	10.4	0.0	0.00	0.0	0.7	0.14	5.0	0.5	0.11	3.53
4-METHYL-1-PENTENE	0.5	0.04	2.1	0.3	0.30	1.5	0.0	0.00	0.0	0.3	0.06	1.21
3-METHYL-1-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CYCLOPENTANE	1.3	0.11	3.2	0.0	0.00	0.0	0.7	0.14	1.6	0.5	0.11	1.10
2,3-DIMETHYLBUTANE	7.1	0.59	7.6	1.3	1.11	1.4	3.3	0.71	3.5	3.0	0.70	3.24
MTBE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-METHYL-CIS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLPENTANE	10.1	0.84	15.4	1.5	1.29	2.2	4.7	1.01	7.2	4.1	0.95	6.32
4-METHYL-TRANS-2-PENTENE	0.3	0.03	2.2	0.0	0.00	0.0	0.1	0.03	0.8	0.1	0.02	0.69
3-METHYLPENTANE	5.7	0.47	8.6	0.9	0.78	1.4	2.5	0.54	3.8	2.3	0.53	3.52
2-METHYL-1-PENTENE	0.4	0.03	1.6	0.0	0.00	0.0	0.0	0.01	0.2	0.1	0.02	0.38
1-HEXENE	0.4	0.03	1.6	0.0	0.00	0.0	0.0	0.01	0.2	0.1	0.02	0.38
HEXANE	6.0	0.50	5.9	0.9	0.77	0.9	2.7	0.58	2.6	2.4	0.56	2.39
UNIDENTIFIED C8 OLEFINS	0.8	0.07	5.7	0.0	0.00	0.0	0.2	0.04	1.1	0.2	0.05	1.48
TRANS-3-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-3-HEXENE	0.1	0.01	1.0	0.0	0.00	0.0	0.1	0.03	1.0	0.1	0.02	0.47
DI-ISOPROPYL ETHER	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-HEXENE	0.3	0.02	1.7	0.0	0.00	0.0	0.2	0.05	1.6	0.1	0.03	0.79
3-METHYL-TRANS-2-PENTENE	0.5	0.04	3.5	0.0	0.00	0.0	0.2	0.05	1.6	0.2	0.04	1.17
2-METHYL-2-PENTENE	0.6	0.05	4.3	0.0	0.00	0.0	0.3	0.06	1.7	0.2	0.05	1.38
3-METHYLCYCLOPENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-HEXENE	0.3	0.03	2.1	0.0	0.00	0.0	0.1	0.02	0.7	0.1	0.02	0.63
ETBE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYL-CIS-2-PENTENE	0.3	0.03	2.2	0.4	0.33	2.5	0.2	0.04	1.3	0.3	0.07	2.15
2,2-DIMETHYLPENTANE, NOTE A	5.2	0.43	7.3	0.0	0.00	0.0	2.3	0.49	3.2	1.7	0.39	2.37
METHYLCYCLOPENTANE, NOTE A	0.8	0.07	2.2	0.0	0.00	0.0	0.3	0.05	0.7	0.2	0.05	0.68
2,4-DIMETHYLPENTANE	6.8	0.57	12.1	0.7	0.61	1.2	3.1	0.68	5.5	2.6	0.60	4.65
2,2,3-TRIMETHYLBUTANE	0.5	0.04	0.6	0.0	0.00	0.0	0.3	0.06	0.3	0.2	0.04	0.23
3,4-DIMETHYL-1-PENTENE	0.2	0.01	0.6	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.12
1-METHYLCYCLOPENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
BENZENE	44.8	3.73	18.8	1.7	1.53	0.7	20.0	4.31	8.4	15.7	3.60	6.58
3-METHYL-1-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,3-DIMETHYLPENTANE	0.3	0.03	0.2	0.2	0.22	0.2	0.1	0.02	0.1	0.2	0.05	0.16
CYCLOHEXANE	3.4	0.28	4.4	0.4	0.33	0.5	1.5	0.32	1.9	1.3	0.30	1.68
2-METHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYLPENTANE	6.2	0.52	9.4	0.4	0.33	0.8	2.6	0.56	3.9	2.2	0.50	3.32
1,1-DIMETHYLCYCLOPENTANE	0.2	0.02	0.4	0.0	0.00	0.0	0.1	0.02	0.2	0.1	0.02	0.13
TERT-AMYL METHYL ETHER	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CYCLOHEXENE	0.2	0.02	1.3	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.28

3-METHYLHEXANE	1.8	0.15	2.5	0.1	0.11	0.2	0.7	0.16	1.0	0.6	0.14	0.88
CIS-1,3-DIMETHYLCYCLOPENTANE	0.4	0.03	1.0	0.0	0.00	0.0	0.2	0.04	0.4	0.1	0.03	0.33
3-ETHYLPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,2-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,3-DIMETHYLCYCLOPENTANE	0.3	0.03	0.8	0.0	0.00	0.0	0.1	0.03	0.3	0.1	0.02	0.25
1-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,4-TRIMETHYLPENTANE	136.0	11.31	126.5	16.8	14.73	15.6	63.3	13.83	58.9	54.2	12.46	50.43
2-METHYL-1-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-3-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEPTANE	2.1	0.18	1.7	0.2	0.14	0.1	0.8	0.17	0.6	0.7	0.17	0.60
CIS-3-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNIDENTIFIED C7	0.2	0.02	1.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.21
2-METHYL-2-HEXENE	0.1	0.01	0.7	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.15
3-METHYL-TRANS-3-HEXENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-HEPTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-ETHYL-CIS-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4,4-TRIMETHYL-1-PENTENE	0.1	0.01	0.4	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.08
2,3-DIMETHYL-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-HEPTENE	0.3	0.03	1.7	0.0	0.00	0.0	0.2	0.04	1.0	0.1	0.03	0.62
METHYLCYCLOHEXANE	2.9	0.24	5.4	0.2	0.17	0.3	1.2	0.25	2.2	1.0	0.24	1.90
CIS-1,2-DIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,1,3-TRIMETHYLCYCLOPENTANE	0.2	0.02	0.4	0.0	0.00	0.0	0.1	0.02	0.2	0.1	0.02	0.13
2,4,4-TRIMETHYL-2-PENTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,3-TRIMETHYLPENTANE	13.4	1.12	16.1	0.7	0.63	0.9	5.8	1.28	7.0	4.8	1.09	5.70
2,5-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLHEXANE	13.9	1.16	20.9	1.0	0.90	1.5	5.5	1.17	8.2	4.9	1.13	7.36
1-TRANS-2-CIS-4-TRIMETHYLCYCLOPENTANE	0.2	0.02	0.4	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.09
3,3-DIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-TRANS-2-CIS-3-TRIMETHYLCYCLOPENTANE	0.1	0.01	0.3	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.06
2,3,4-TRIMETHYLPENTANE	25.9	2.16	41.5	1.7	1.49	2.7	10.9	2.35	17.5	9.2	2.12	14.78
2,3,3-TRIMETHYLPENTANE	30.3	2.52	36.4	2.8	2.43	3.3	13.4	2.88	18.0	11.4	2.61	13.65
TOLUENE	267.1	23.88	783.8	1.7	1.52	4.7	91.5	19.70	249.9	85.4	19.62	233.23
2,3-DIMETHYLHEXANE	14.7	1.22	19.4	0.3	0.24	0.4	4.8	1.03	6.3	4.5	1.03	5.94
1,1,2-TRIMETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLHEPTANE	1.1	0.09	1.1	0.0	0.00	0.0	0.4	0.09	0.4	0.3	0.08	0.33
3,4-DIMETHYLHEXANE, NOTE B	2.2	0.18	2.9	0.0	0.00	0.0	0.8	0.18	1.1	0.7	0.15	0.91
4-METHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-METHYLHEPTANE	0.8	0.07	0.8	0.0	0.00	0.0	0.4	0.08	0.3	0.3	0.06	0.26
1-CIS,2-TRANS,3-TRIMETHYLCYCLOPENTANE	0.2	0.01	0.3	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.07
CIS-1,3-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,4-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3-ETHYLHEXANE	0.4	0.03	0.5	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02	0.10
2,2,5-TRIMETHYLHEXANE	9.6	0.80	9.3	0.5	0.46	0.5	3.8	0.82	3.7	3.3	0.76	3.21
TRANS-1-METHYL-3-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-1-METHYL-3-ETHYLCYCLOPENTANE	0.2	0.02	0.5	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.01	0.10
1,1-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1-METHYL-2-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-1-ETHYL-CYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4,4-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2,4-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-1,2-DIMETHYLCYCLOHEXANE	0.2	0.01	0.3	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.07
1-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-4-OCTENE	0.3	0.02	1.4	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.01	0.29
OCTANE	0.7	0.05	0.4	0.0	0.00	0.0	0.3	0.06	0.2	0.2	0.05	0.13
UNIDENTIFIED C8	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
TRANS-2-OCTENE	0.5	0.04	2.4	0.0	0.00	0.0	0.2	0.04	0.9	0.1	0.03	0.75
TRANS-1,3-DIMETHYLCYCLOHEXANE, NOTE C	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-2-OCTENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ISOPROPYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,2-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3,5-TRIMETHYLHEXANE	1.3	0.10	1.4	0.0	0.00	0.0	0.5	0.10	0.5	0.4	0.09	0.44
CIS-1-METHYL-2-ETHYLCYCLOPENTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,4-DIMETHYLHEPTANE	0.3	0.02	0.4	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.01	0.07
4,4-DIMETHYLHEPTANE	0.1	0.01	0.1	0.3	0.22	0.3	0.0	0.00	0.0	0.2	0.04	0.18
CIS-1,2-DIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,6-DIMETHYLHEPTANE, NOTE D	0.5	0.04	0.6	0.0	0.00	0.0	0.2	0.04	0.2	0.1	0.03	0.17
1,1,3-TRIMETHYLCYCLOHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,5-DIMETHYLHEPTANE, NOTE E	0.4	0.04	0.5	0.0	0.00	0.0	0.3	0.06	0.3	0.2	0.04	0.19
3,3-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,5-DIMETHYLHEPTANE, NOTE E	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ETHYLBENZENE	10.2	0.85	27.5	0.0	0.00	0.0	3.8	0.83	10.4	3.2	0.73	8.54
2,3,4-TRIMETHYLHEXANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2,3-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
m- & p-XYLENE	10.7	0.89	79.2	0.0	0.00	0.0	4.5	0.98	33.6	3.5	0.80	25.60
4-METHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,4-DIMETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
4-ETHYLHEPTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
2-METHYLOCTANE	0.3	0.03	0.4	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02	0.08
3-METHYLOCTANE	0.2	0.01	0.2	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.04

STYRENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
o-XYLENE	6.1	0.50	39.1	0.0	0.00	0.0	2.5	0.54	16.3	1.9	0.45	12.56
1-NONENE	0.6	0.05	1.4	0.0	0.00	0.0	0.1	0.03	0.3	0.2	0.04	0.38
TRANS-3-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
CIS-3-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
NONANE	0.4	0.04	0.2	0.0	0.00	0.0	0.1	0.03	0.1	0.1	0.03	0.07
TRANS-2-NONENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
ISOPROPYLBENZENE (CUMENE)	0.3	0.02	0.6	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.01	0.13
2,2-DIMETHYLOCTANE	0.3	0.03	0.3	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02	0.07
2,4-DIMETHYLOCTANE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
n-PROPYLBENZENE	5.2	0.43	11.0	0.0	0.00	0.0	1.0	0.22	2.1	1.3	0.31	2.85
1-METHYL-3-ETHYLBENZENE	23.9	1.99	172.3	0.2	0.16	1.3	5.7	1.23	41.0	6.6	1.52	47.58
1-METHYL-4-ETHYLBENZENE	10.6	0.88	76.4	0.0	0.00	0.0	2.6	0.56	18.6	2.9	0.67	20.93
1,3,5-TRIMETHYLBENZENE	12.1	1.01	122.5	0.2	0.17	1.9	3.0	0.64	30.1	3.4	0.79	34.59
1-METHYL-2-ETHYLBENZENE	9.5	0.79	68.3	0.1	0.12	1.0	2.3	0.49	16.4	2.7	0.61	19.14
1,2,4-TRIMETHYLBENZENE	38.6	3.21	341.1	0.8	0.73	7.3	5.3	1.14	48.6	9.9	2.27	87.14
TERT-BUTYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-DECENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
DECANE, NOTE F	0.4	0.04	0.2	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02	0.04
ISOBUTYLBENZENE, NOTE F	0.4	0.03	0.7	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02	0.15
1,3-DIMETHYL-5-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
METHYLPROPYLBENZENE (sec butylbenzene)	0.5	0.04	0.9	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02	0.19
1-METHYL-3-ISOPROPYLBENZENE	7.5	0.62	43.8	0.0	0.00	0.0	0.4	0.08	2.2	1.7	0.38	9.66
1,2,3-TRIMETHYLBENZENE	0.6	0.05	5.0	0.0	0.00	0.0	0.9	0.19	7.9	0.4	0.08	3.20
1-METHYL-4-ISOPROPYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
INDAN	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-2-ISOPROPYLBENZENE	0.7	0.06	4.2	0.0	0.00	0.0	0.7	0.15	4.1	0.3	0.08	1.98
1,3-DIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,4-DIETHYLBENZENE	0.3	0.02	1.9	0.0	0.00	0.0	0.8	0.14	4.0	0.2	0.05	1.50
1-METHYL-3-N-PROPYLBENZENE	0.4	0.03	2.5	0.0	0.00	0.0	0.2	0.03	1.0	0.1	0.03	0.79
1-METHYL-4-N-PROPYLBENZENE, NOTE G	0.0	0.00	0.0	0.0	0.00	0.0	0.4	0.08	2.3	0.1	0.02	0.64
1,2-DIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1-METHYL-2-N-PROPYLBENZENE	1.9	0.16	12.4	0.0	0.00	0.0	0.6	0.13	3.8	0.6	0.13	3.61
1,4-DIMETHYL-2-ETHYLBENZENE	1.7	0.14	15.2	0.0	0.00	0.0	0.3	0.06	2.4	0.4	0.10	3.80
1,3-DIMETHYL-4-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2-DIMETHYL-4-ETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,3-DIMETHYL-2-ETHYLBENZENE	1.4	0.11	12.5	0.0	0.00	0.0	0.3	0.07	2.9	0.4	0.09	3.38
UNDECANE	0.4	0.04	0.2	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02	0.04
1,2-DIMETHYL-3-ETHYLBENZENE	0.3	0.03	2.8	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.01	0.58
1,2,4,5-TETRAMETHYLBENZENE	0.1	0.01	1.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.20
2-METHYLBUTYLBENZENE (sec AMYLBENZENE)	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
3,4-DIMETHYLCUMENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,3,5-TETRAMETHYLBENZENE	0.4	0.03	3.2	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.02	0.67
TERT-1-BUT-2-METHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,3,4-TETRAMETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
N-PENT-BENZENE	0.1	0.01	0.2	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.03
TERT-1-BUT-3,5-DIMETHYLBENZENE	0.1	0.01	0.8	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.16
TERT-1-BUTYL-4-ETHYLBENZENE	0.2	0.01	1.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.21
NAPHTHALENE	0.1	0.01	0.1	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.02
DODECANE	1.4	0.12	0.5	0.0	0.00	0.0	0.0	0.00	0.0	0.3	0.07	0.11
1,3,5-TRIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
1,2,4-TRIETHYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
HEXYLBENZENE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00
UNIDENTIFIED C9-C12+	20.5	1.71	78.2	0.0	0.00	0.0	3.8	0.81	14.4	5.3	1.21	20.14
FORMALDEHYDE	11.2	0.94	80.4	0.6	0.55	4.4	3.0	0.64	21.3	3.5	0.80	24.77
ACETALDEHYDE	3.2	0.27	17.7	0.0	0.00	0.0	1.2	0.25	6.4	1.0	0.23	5.43
ACROLEIN	0.5	0.04	3.6	0.0	0.00	0.0	0.0	0.00	0.0	0.1	0.03	0.74
ACETONE	2.3	0.19	1.3	0.2	0.14	0.1	1.3	0.29	0.7	0.9	0.21	0.52
PROPIONALDEHYDE	0.1	0.01	0.7	0.0	0.00	0.0	0.1	0.01	0.4	0.0	0.01	0.25
CROTONALDEHYDE	0.0	0.00	0.0	0.0	0.02	0.1	0.3	0.05	1.4	0.1	0.02	0.45
ISOBUTYRALDEHYDE, NOTE H	0.1	0.01	0.4	0.0	0.00	0.0	0.1	0.03	0.7	0.1	0.01	0.29
METHYL ETHYL KETONE, NOTE H	0.1	0.01	0.1	0.0	0.00	0.0	0.1	0.03	0.2	0.1	0.01	0.07
BENZALDEHYDE	2.8	0.23	-1.5	0.0	0.00	0.0	0.5	0.11	-0.3	0.7	0.17	-0.40
ISOVALERALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.1	0.0	0.00	0.03
VALERALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	0.1	0.0	0.00	0.03
O-TOLUALDEHYDE	0.1	0.01	-0.1	0.0	0.00	0.0	0.1	0.02	-0.0	0.1	0.01	-0.03
MP-TOLUALDEHYDE	0.1	0.01	-0.1	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.01	-0.02
HEXANALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.3	0.05	0.9	0.1	0.02	0.26
DIMETHYLBENZALDEHYDE	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	0.00	0.00

A - 2,2-Dimethylpentane and methylcyclopentane co-elute. GC peak area split equally between the two compounds.

B - 3-Methyl-3-ethyl-pentane co-elutes with reported compound. Not reported separately.

C - Cis-1,4-Dimethylcyclohexane co-elutes with reported compound. Not reported separately.

D - Propylcyclopentane co-elutes with reported compound. Not reported separately.

E - 2,5-Dimethylheptane and 3,5-dimethylheptane co-elute. GC peak area split equally between the two compounds.

F - Decane and isobutylbenzene co-elute. GC peak area split equally between the two compounds.

G - n-Butylbenzene co-elutes with reported compound. Not reported separately.

H - Isobutyraldehyde and methyl ethyl ketone co-elute. LC peak area split equally between the two compounds.

**APPENDIX F**  
**SELECTED GASOLINE/CNG WEIGHTED FTP EXHAUST SPECIES (mg/mi)**  
**ON VEHICLE NOS. 72031, 72038, AND 72051**  
**AT 4,000- 10,000- AND 20,000-MILE INTERVALS**



### SELECTED WEIGHTED FTP EXHAUST SPECIES (mg/ml)

VEHICLE #	G24-72031					
FUEL	GASOLINE			CNG		
MILEAGE	4,000	10,000	20,000	4,000	10,000	20,000
METHANE	174.53	141.62	111.27	2417.44	2559.15	2405.12
ETHYLENE	35.26	20.83	15.94	2.92	2.97	2.97
ETHANE	20.40	26.57	16.55	80.81	103.50	94.78
ACETYLENE	2.45	1.70	2.36	0.00	0.03	0.01
PROPYLENE	18.75	12.46	8.51	0.41	0.42	0.37
PROPANE	3.00	1.30	0.72	10.30	8.30	8.01
PROPADIENE	0.00	0.00	0.00	0.00	0.00	0.00
2-METHYLPROPANE (ISOBUTANE)	10.60	8.02	4.99	1.44	1.42	1.27
2-METHYLPROPENE (ISOBUTYLENE)	11.90	8.84	7.85	0.13	0.12	0.25
1-BUTENE	3.26	1.90	1.38	0.08	0.08	0.05
1,3-BUTADIENE	0.26	0.29	0.31	0.04	0.05	0.05
BUTANE	6.31	7.63	5.17	1.95	1.45	1.86
TRANS-2-BUTENE	4.68	2.37	1.41	0.07	0.08	0.08
2,2-DIMETHYLPROPANE (NEOPENTANE)	0.60	0.22	0.14	0.06	0.00	0.01
CIS-2-BUTENE	7.20	2.67	1.77	0.00	0.08	0.05
3-METHYL-1-BUTENE	0.00	0.00	0.00	0.00	0.00	0.00
2-METHYLBUTANE (ISOPENTANE)	81.87	38.18	32.58	2.25	0.98	2.32
1-PENTENE	0.47	0.39	0.39	0.00	0.00	0.00
2-METHYL-1-BUTENE	0.69	0.72	0.51	0.00	0.00	0.00
PENTANE	8.19	8.29	6.25	0.51	0.14	0.74
BENZENE	19.34	24.18	11.37	0.09	0.16	0.04
TOLUENE	76.43	79.85	60.88	0.72	0.00	0.38
ETHYLBENZENE	3.52	2.63	3.10	0.00	0.02	0.00
FORMALDEHYDE	2.20	3.40	1.58	1.10	2.40	1.07
ACETALDEHYDE	1.10	1.30	0.61	0.10	0.20	0.06

### SELECTED WEIGHTED FTP EXHAUST SPECIES (mg/ml)

VEHICLE #	G24-72038					
FUEL	GASOLINE			CNG		
MILEAGE	4,000	10,000	20,000	4,000	10,000	20,000
METHANE	118.23	133.29	110.81	2509.68	2208.18	2143.11
ETHYLENE	20.30	23.35	18.08	3.30	3.88	4.55
ETHANE	13.52	27.99	19.13	88.43	109.18	102.50
ACETYLENE	2.58	3.16	2.80	0.02	0.15	0.09
PROPYLENE	10.75	12.57	9.44	0.56	0.48	0.37
PROPANE	1.00	1.00	0.87	12.40	9.70	9.45
PROPADIENE	0.00	0.00	0.00	0.00	0.00	0.00
2-METHYLPROPANE (ISOBUTANE)	7.29	11.99	5.68	2.06	2.01	1.55
2-METHYLPROPENE (ISOBUTYLENE)	7.29	8.90	8.72	0.17	0.18	0.26
1-BUTENE	1.90	1.76	1.36	0.09	0.09	0.06
1,3-BUTADIENE	0.24	0.34	0.33	0.04	0.03	0.03
BUTANE	3.91	10.28	5.60	2.45	2.07	2.05
TRANS-2-BUTENE	2.15	2.35	1.36	0.12	0.12	0.10
2,2-DIMETHYLPROPANE (NEOPENTANE)	0.41	0.25	0.15	0.00	0.00	0.01
CIS-2-BUTENE	3.17	2.39	1.47	0.10	0.11	0.10
3-METHYL-1-BUTENE	0.00	0.00	0.00	0.00	0.00	0.00
2-METHYLBUTANE (ISOPENTANE)	43.62	57.28	37.64	1.88	1.13	2.10
1-PENTENE	0.21	0.17	0.16	0.00	0.00	0.00
2-METHYL-1-BUTENE	0.48	0.14	0.55	0.00	0.00	0.00
PENTANE	4.43	11.23	6.50	0.31	0.32	0.29
BENZENE	14.70	24.58	11.60	0.10	0.24	0.13
TOLUENE	57.38	80.99	59.43	0.27	0.00	0.04
ETHYLBENZENE	2.29	2.65	2.50	0.00	0.00	0.00
FORMALDEHYDE	2.00	4.80	3.06	1.50	2.80	1.16
ACETALDEHYDE	0.70	1.30	1.13	0.10	0.30	0.02

# SELECTED WEIGHTED FTP EXHAUST SPECIES (mg/mi)

VEHICLE #	G24-72051					
	GASOLINE			CNG		
FUEL	4,000	10,000	20,000	4,000	10,000	20,000
MILEAGE						
METHANE	116.33	123.34	129.85	2424.74	2317.01	2228.16
ETHYLENE	17.45	23.97	26.06	3.91	4.27	5.64
ETHANE	14.39	24.04	23.00	69.99	104.65	107.10
ACETYLENE	3.03	3.02	3.59	0.01	0.09	0.07
PROPYLENE	10.35	13.56	11.74	0.52	0.48	0.45
PROPANE	1.10	1.80	1.10	11.40	9.90	11.35
PROPADIENE	0.00	0.00	0.00	0.00	0.00	0.00
2-METHYLPROPANE (ISOBUTANE)	6.96	10.14	7.49	1.67	1.73	1.71
2-METHYLPROPENE (ISOBUTYLENE)	6.94	9.56	10.70	0.14	0.14	0.39
1-BUTENE	1.50	2.05	1.87	0.13	0.10	0.10
1,3-BUTADIENE	0.29	0.35	0.42	0.07	0.04	0.01
BUTANE	4.10	9.24	7.77	2.44	1.76	2.44
TRANS-2-BUTENE	1.77	2.39	1.79	0.18	0.13	0.15
2,2-DIMETHYLPROPANE (NEOPENTANE)	0.36	0.23	0.20	0.12	0.00	0.02
CIS-2-BUTENE	2.16	2.83	2.16	0.03	0.14	0.17
3-METHYL-1-BUTENE	0.00	0.00	0.00	0.00	0.00	0.00
2-METHYLBUTANE (ISOPENTANE)	41.17	47.97	47.55	2.20	1.07	1.98
1-PENTENE	0.18	0.31	0.33	0.00	0.00	0.00
2-METHYL-1-BUTENE	0.42	0.24	0.67	0.00	0.03	0.00
PENTANE	4.18	10.47	9.15	0.43	0.20	0.77
BENZENE	15.24	25.75	15.67	0.15	0.04	0.14
TOLUENE	62.46	90.84	85.43	1.20	0.00	0.10
ETHYLBENZENE	2.06	3.18	0.00	0.00	0.01	0.00
FORMALDEHYDE	2.00	5.40	3.46	1.30	3.30	2.24
ACETALDEHYDE	0.60	1.70	0.98	0.10	0.50	0.19